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PLATO'S THEORY OF FORMS

THE theory of Ideas, or forms, lies in the opinion of most critics at the heart of Plato's philosophy: but *what* the forms are, and what exactly is the part they play, is still a matter about which there is enough difference of opinion to make it incumbent on a student of the dialogues to exercise some degree of independent judgment. The present article does not aim at novelty, but is an attempt to canvass the more important points of evidence in order to discover if possible to what extent they lend themselves to a consistent and plausible picture of Plato's state of mind.

We are fortunate in possessing a firsthand contemporary account of Plato's doctrine from a thoroughly competent source; and there would seem to be a certain advantage, therefore, in taking this as a starting point. The only thing against it would be some definite presumption that Aristotle has radically misunderstood his teacher. This always remains a possibility; indeed it is even probable that his interpretation will be found colored more or less by his own philosophical beliefs. But when he says explicitly that Plato held this or that opinion, even though it may not be an opinion we should gather naturally from the dialogues, we are plainly bound to take the statement into serious account; we should be justified in rejecting it only in case it can be shown to be demonstrably *inconsistent* with something that Plato has himself to say.

Setting aside for the moment technical complexities, there are two major points in Aristotle's testimony. Plato, he tells us, identified the forms with "numbers"; this is perhaps its outstanding feature. Also he seems to say that such a doctrine does not represent the *origin* of the theory in Plato's mind. "Now regarding Ideas", he writes, "we must first examine the ideal theory itself, not con-

necting it in any way with the nature of numbers, but treating it in the form in which it was originally understood by those who first maintained the existence of the Ideas."[1] There is one way to evade the apparent implication of this statement; we might suppose, with Burnet, that Aristotle is intending to contrast, not two stages in Plato's thinking, but the Platonic theory with an earlier and non-Platonic one. Such an interpretation is however pretty plainly influenced by the need to get around a difficulty which Aristotle offers to Burnet's personal views; there is nothing in the passage itself to demand it, and the natural impression one gets from Aristotle's whole treatment of the matter, to say nothing of an explicit statement elsewhere,[2] is that Plato was the originator of the doctrine of Ideas. And now of this original sense attached to "forms" Aristotle has a simple and intelligible account to give; a form, namely, is a universal—anything, that is, which is the object of a definition. "To each thing there answers an entity which has the same name and exists apart from the substances, and so also in the case of all other groups there is a one over many, whether the many are in this world or are eternal."[3]

I shall assume then, as a working hypothesis, that Aristotle understood the original doctrine of the form to have taken its start from logical definition, and that the object of any such definition in common or universal terms has therefore a presumptive title to be called a form. There is the less need to question this in that it is supported by a large mass of evidence from the dialogues. Plato employs the terms εἶδος and ἰδέα with a wide variety of shades of meaning; but most frequently they stand for a class of objects or for the common nature which makes classes possible.[4] It is unnecessary to quote the fairly numerous statements where the form appears as the outcome of an act of generalization leading to a definition;[5] but I may call attention to two passages where the bearing on an ultimate philosophy is particularly clear. Every

[1] M 1078b 9.
[2] M 1086a 11.
[3] A 990b 6. See also A 987b 30; M 1078b 30; and *cf. Parm.* 135ab.
[4] *E.g., Crat.* 386e, 424cd; *Laches* 191d; *Phaedo* 79a; *Phaedr.* 263b, 265a, 271d; *Symp.* 205b; *Rep.* 357c, 477ce; *Theaet.* 148d, 157c, 178a, 181d; *Soph.* 235d; *Phileb.* 32b, 44e; *Polit.* 258c, 262b, 285a, 307d; *Tim.* 37e, 57c, 69c, 83c; *Laws* 630e, 700a, 963c.
[5] *Euthyphro* 6d; *Laches* 191d; *Meno* 72b f, 75a; *Phaedo* 74b; *Phaedr.* 249b, 265d, 273e; *Rep.* 507b; *Polit.* 285b; *Phileb.* 25a; *Tim.* 83c; *Parmen.* 132ac.

existing object has, he tells us in the Seventh Letter, three things which are the necessary means by which knowledge of that object is acquired—the name, the definition, and the image or phenomenal appearance; then comes knowledge itself as a fourth thing, and as a fifth we must postulate the object itself—the reality which is cognizable and true.[6] Here the special inference to be drawn is that a knowledge of reality lies directly in the line of progress that starts from the attempt to render the meaning of the name precise through definition. The same conclusion follows from the well known passage in the *Parmenides*.[7] It is true of course that this is put in the mouth of Socrates and might just conceivably be dissociated from Plato's own opinions. But even granting that Plato would have been likely to insert a fragment of literal biography in a dialogue with the general characteristics of the *Parmenides*, the probability would still be strong that he does not himself reject the implications of the passage. We may fairly gather, then, that for Plato the most decisive examples of the form are connected with logical and ethical concepts; that he had at first reason to be more hesitant about the ideal reality of "natural kinds" like man or fire though he came to see that such a conclusion could hardly be avoided; and that while there is still more difficulty in believing that things like hair and mud have likewise their corresponding forms this too is a natural outcome to which his principle might be supposed to lead.

Before going further, there is one distinction which I think is of some importance for the formulation of his doctrine. I have just noticed incidentally that a difference might be made between a group of objects that possess some common feature and this universal element itself which justifies us in giving them a common name. Plato often uses εἶδος in the former or logical sense where no metaphysical assumption is or need be involved; when however his words do carry such a natural implication it is the latter emphasis he has in mind.[8] This is bound to follow from the rôle which the Idea plays. Plato leaves us in no doubt as to *why* the defining and universalizing intellect gives us access to a more ultimate realm of being than do sensation and empirical opinion; the

[6] 342a. *Cf. Laws* 895d.
[7] 130b f.
[8] *Cf. Euthyphro* 5d, 6d; *Meno* 72c f.; *Phaedo* 74a, 102b, 103e; *Rep.* 402c, 437e, 476a f.; *Parmen.* 129b f.; *Soph.* 254c f.; 258c.

reason is that nothing is deserving to be called "real" which is not eternally fixed and stable, alike in itself and in the reflex of itself that constitutes knowledge.[9] Knowledge is genuinely knowledge *only* when it is absolutely certain and unchanging—this is one of the major premises of Plato's thought; and it cannot be certain unless it is attached to an unchanging object. Such an object cannot belong to the world of phenomena within which sense and opinion move. The only thing that persists is the eternal essence whose presence in particular changing things enables the mind to grasp them firmly and rescue them from the empirical flux; and the essence, consequently, arrived at not through the bodily senses but through the power of reason inherent in the soul, is the goal at which all true thinking aims. It is this verifiable difference between sensation and opinion on the one hand and rational knowledge on the other which establishes decisively the existence of the forms. "If reason and true opinion are two distinct kinds, most certainly these self-subsisting forms do exist, imperceptible by our senses, and objects of reason only.—Now these two kinds must be declared to be two, because they have come into existence separately and are unlike in condition."[10]

Meanwhile the special point I started out to make is a somewhat different one. Among the forms that for Plato belong to the intelligible world it is possible, and for certain purposes almost necessary, to make a further distinction. This is the distinction between forms where the emphasis is on the common nature of a more or less well defined group of individuals, and those that stand primarily for some single abstract characteristic, like beauty or equality or greatness, in which indeed a number of objects may participate, but without thereby constituting a generally recognized class or species for the ordinary purposes of human thinking.[11] It is seldom we have occasion to speak of "equal things" or "great things", or even of good and beautiful things, unless our interest lies in equality or greatness rather than in any "class". And in the large it is in the second connection that the metaphysical status

[9] *Meno* 98a; *Crat.* 439e f.; *Phaedo* 78de, 79d; *Rep.* 479a, 485ab, 490b, 500c, 524e, 585c; *Theaet.* 183ab; *Parmen.* 135bc; *Phileb.* 59bc; *Tim.* 52a; *Epis.* VII, 342c.

[10] *Tim.* 51d. *Cf. Meno* 98ab; *Rep.* 477e f.

[11] *Cf. Met.* 990b 16.

of the Idea is most unequivocal. This is by no means universally the case. In the *Philebus*, for example,[12] man and ox appear in company with beauty and the good as typical Ideas; indeed we shall have to consider later the possibility that such natural kinds came to be for Plato forms in a special and distinctive sense. But taking the dialogues as a whole I think that with qualifications the statement just made will stand. At least the ability to universalize objects of discourse for purposes of identification does not seem *necessarily* to give them an ideal status; empirically definable class-terms may be ultimately real, but then again to all appearance they may not. It is difficult to suppose Plato would have allowed a place in the "heaven of Ideas" to forms of the changing visible object, of doubtful things, of madness, of evil, of imitation;[13] whereas the same doubt seldom arises when he is talking about the abstracter characteristics which logical analysis uncovers.

And now it follows that we are called on to distinguish two steps in the intellectual procedure which philosophy presupposes. In the first instance Plato will be found engaged with such a logical *analysis*—with breaking up, that is, the complexity of thought into its constituents. This *is* of course the first essential if we are to have anything like exact scientific definition or explanation; and there is a side of his thinking, therefore, where the ideal world may seem to take the form of a multitude of such simple, self-identical and unchanging entities. This would help explain why natural species such as man are presumed in the *Parmenides* to carry less immediate conviction than the abstracter forms of beauty or similarity. To stop here would however clearly be impossible. For analysis is not as yet *definition* and as a matter of fact might appear to leave us with a host of indefinables; for concrete thinking it is merely a preliminary stage. When Plato tells us that the mass of men can never be expected to rise from the perception of beautiful things to the Idea of beauty, he is taking too low a view of the powers of the average mind if he means by beauty-in-itself only the abstract character implied in calling objects beautiful. One who has had no practice in analysis may find

[12] 15a.

[13] *Phaedo* 79a; *Phaedr.* 263b, 265a; *Lysis* 216d; *Rep.* 445c, 476a; *Soph.* 235d.

it a little hard at first to avoid confusing instances of beauty with the quality they embody, but Socrates usually has no great trouble in making even rather stupid hearers recognize the difference; such a direct jump from the use of a common term to the perception that the term points to some identity in the things to which it is applied is well within the reach of a man of very moderate intelligence. But after the feat has been performed we still have taken only a short step. "Beauty" does not define beautiful things in the sense of interpreting them rationally; at the most it can be held in a certain sense to explain *why* they are beautiful, and even this it does after what Plato himself calls a "safe and untutored" fashion.[14]

If we are genuinely to enter the field of dialectic, then, logical analysis will need supplementing; it sets problems which are in no way answered merely by translating the characteristics it brings to light to a higher realm of being through the recognition that they are now freed from the taint of relativity and change, or by employing such abstract forms to characterize a vague class of objects which participate in them. Philosophy is interested in the definition of the forms themselves. Now it may be that some of them are really indefinable; and as a matter of fact this very well may seem to be the case with the logical "categories"—being, identity, unity and the like. Accordingly in treating these Plato in practice accepts them for most purposes as ultimates immediately open to the soul's perception, which dialectic has to presuppose.[15] This is however to anticipate a little; what needs here to be observed is that in other cases, and those the ones that come closest to his primary interest, Plato does aim at a *definition* of the form.[16] The earlier dialogues in large part are concerned with defining virtues, which evidently does not mean the mere easy recognition of an abstract identity among virtuous acts but assumes the possibility of some more illuminating description of that wherein the essence of the virtues—temperance, justice, holiness—consists; and the ultimate quest of Plato's whole philosophy is to *define* the nature of the Good. What then is the direction such a program takes?

First a word about the more general conception of method.

[14] *Phaedo* 105c. *Cf.* 100d.
[15] *Theaet.* 185c-e.
[16] *Cf. Laws* 964a.

Dialectic in its simplest form is the way of question and answer which we can fairly assume goes back to Socrates. Here the disputants aim to find some statement or hypothesis on which both of them for the moment can agree. This is examined to see what consequences follow from it, and so long as no contradictions develop it is allowed to stand; if however it does give rise to inconsistencies it is abandoned and a new hypothesis is set up in its place. So far it represents primarily a formal condition of fruitful *argument*. But for the philosopher who aims at definitive knowledge it is something more.[17] The mere fact that the disputants agree does not show that their opinion is correct; even the mathematician finds himself starting from hypotheses which, while their general acceptance makes his special science possible, are nevertheless taken for granted rather than demonstrated. It is the business of an ultimate philosophy to "do away with hypotheses in order to establish them". They must be derived, that is, rather than assumed; and so unless we are to be committed to an infinite regress we must sooner or later arrive at principles which themselves stand in no need of further evidence.

In a purely formal way this might perhaps be interpreted as a process of abstraction which leads us in the end to the most abstract form of all—pure Being; that is the course which philosophy has sometimes taken. But it is not Plato's way. Somehow reality is for him a *system*—a universal which includes complexity and unity alike; he is explicit in rejecting the Eleatic One interpreted as just Being itself into which no diversity enters. The blanket objection to Eleaticism is that it wipes out forthwith the whole phenomenal world, and so leaves no place for science in the sense in which science aims to throw light on the actual facts of the universe and of man's experience. The business of a true philosophy is to explain appearances, not to explain them away; and it can only do this in terms of inclusiveness rather than of exclusion.[18] And for the same reason Plato is bound to reject a conception of the form which would regard this as a self-subsistent entity alongside a mere conglomerate of other forms.

[17] *Cf. Meno* 98a; *Rep.* 435d, 504b f., 510c f., 531-4.

[18] *Phaedo* 99c; *Phaedr.* 265d-266b, 268de, 271ab; *Rep.* 476a, 531d; *Theaet.* 209a f.; *Soph.* 253d; *Polit.* 285b, 304c; *Phileb.* 15bd, 16c ff., 62a-c; *Tim.* 30cd, 41b, 69c, 92c.

"The complete separation of each thing from all is the utterly final obliteration of all discourse; for our power of discourse is derived from the interweaving of the forms with one another."[19]

Before going on it will be well to call attention to the existence here of two separable problems which in the interest of clearness ought not to be confused. The first thing which the notion of community or "participation" is likely to suggest is the relation between universals and particulars; here the ultimate question is an ontological one and concerns the nature of the connection between two realms of being—the ideal realm and the world of phenomenal existence. The second and related question is one of epistemology. On its more superficial side this has to do with the possibility of knowing objects, and it makes its appearance in the first instance in connection with the logical difficulties raised by the eristics, with their insistence that only identical propositions can avoid self-contradiction. Plato does not take this seriously enough to dwell upon it; the difficulty would apparently be met, in part, by the conception of the individual as a meeting-place of various forms—a doctrine logically unexceptionable whatever its metaphysical basis may be thought to be. The real trouble comes when we turn to the forms themselves and ask whether these may be supposed to participate in one another.[20] The solution of the more fundamental problem is found in the *Sophist*, where in Plato's theory of predication the separation between ontology and a theory of knowledge becomes explicit; here the "is" of existence is definitely distinguished from the "is" of predication, and "is not" is made equivalent, not to "does not exist" but to "is other than".

Coming closer now to the notion of system in its concreter application, there is one general consideration which it will be well to notice at the start, since it will need to be borne in mind constantly in any attempt to interpret Plato's meaning in detail. It has appeared that Aristotle identifies Platonic forms with numbers; and whatever conclusion we arrive at about this identification, it at any rate is true that in a certain large though rather indefinite sense number, or mathematics, has an important part to play in Plato's actual procedure.[21] Even in the earlier group of

[19] *Soph.* 259e. *Cf.* 249c; 251e f.; 257d ff.
[20] *Phileb.* 14c f.; *Soph.* 251a-d.
[21] *Cf. Meno* 82 ff.; *Gorg.* 508a; *Rep.* 522c ff., 546, 602d-603a; *Phileb.*

dialogues we find the new mathematics drawn on to give concreteness to the method of dialectic and to lend true scientific character to a philosophic education; and in the more technical context of the later writings the influence of the mathematical ideal is constantly making its appearance, expressly or by implication.

However, the interpretation of this rôle is not altogether easy. We might perhaps be tempted to think of it as the reduction of all exact knowledge to mathematical formulae in the shape of "laws"; but this, in the modern sense of such a claim at any rate, goes considerably farther than the evidence warrants. At the other extreme it would be possible to hold that all Plato really means is to recommend exact science—which meant in his own day mathematics—as a disciplinary study to train the philosopher in the habits of intellectual precision which belong to true or dialectic thinking. Plato does recommend it for this purpose; or again, at a somewhat lower level, it may be spoken of as a cultural attainment of which the educated man ought for his own credit not to be in ignorance, as an intellectual game appropriate to persons of intelligence, or, in the form of astronomy especially, as a requirement for genuine piety toward the gods.[22] But this hardly by itself does justice to all that his words frequently imply. In the *Republic*, for example, where such an interpretation is more than once suggested,[23] the mathematical sciences seem likewise to be regarded as a *stage* leading to the vision of the Idea of the Good, the principles which bring us into contact with reality being just the principles by which the hypotheses of mathematics are themselves established or explained.[24] Similarly in the *Timaeus* we are told that Time "moving according to number" is created by God to serve as a movable image of Eternity; living creatures attain to reason through their participation in number; it is number that supplies the means of research into the nature of the universe; the elements are generated by means of forms and numbers.[25] At any rate we cannot rule out the possibility that mathematics is constitutive for

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25a-e, 55d ff.; *Laws* 817e ff., 967a-e; *Tim.* 35b f., 43d. See also *Epin.* 976e, 990a ff.

[22] *Laws* 820bc, 822bc.

[23] *Rep.* 503e, 524d-525c, 526b-e, 527d, 530c, 534d, 536d. *Cf. Laws* 747b.

[24] 533c. *Cf.* 511; 531c. See *Epinomis* 990c.

[25] 37d, 39c, 47a-e, 53b, 54d.

philosophy prior to a more detailed consideration of Plato's actual reasoning and results.

It is of some importance to start from the right angle. Now we are pretty safe in saying that Plato's primary interest lay in ethics, and in ethics as a political or social rather than as a narrowly individual affair: he himself tells us this is so in the Seventh Letter; his two largest works—one of them also his latest—are political treatises; the Academy to which he devoted a large share of his life was a school for statesmen; and everywhere the idea of the "good" crops up as the goal of the philosopher.

On the negative side this carries two conclusions, one of them perhaps a little more obvious than the other. At least it is clear that Plato is not first of all interested in the physical sciences, as was the case with the earlier Greek philosophers. In only one late dialogue does he give these any explicit treatment, and he makes it plain that he does not consider them capable of definitive results; they are interesting as intellectual diversions,[26] but conclusions here are probable or plausible rather than certain and necessary, and so are not science at all in the stricter sense.

It cannot be set down as quite so clear that metaphysics is likewise subordinate in Plato's mind to an ethical or political philosophy; indeed in one sense this cannot be the case, since ethics is itself in intellectual terms dependent on an ultimate theory of reality. It is this last conviction which explains one of the most distinctive features of Plato's political system—the place, namely, that philosophy and philosophers hold in the state. Plato maintains consistently that the only hope for the creation and maintenance of a rational society lies in the few, and ultimately perhaps in the one man, in whom genuine wisdom resides; and he means by this more than the familiar demand for "intelligence" in rulers as a compound merely of a sound education, clear thinking, social disinterestedness and a wide experience with affairs. What is called for is precisely the sort of undebatable knowledge which, fostered if not constituted by the mathematical disciplines, is able to relate statesmanship to the ultimate principles of order in the universe.[27]

[26] *Tim.* 59c.

[27] *Theaet.* 173e; *Laws* 965cd, 966b-968a. *Cf.* the attitude toward the "atheist" in the *Laws*.

Nevertheless, in practical terms of interest and concrete motivation we seem justified in calling ethics fundamental. Both as an individual and as a member of society, "reality" translates itself for the philosopher into a source alike of happiness and duty: of duty, because it constrains him to bring his vision of the good down from the heavens into the world of men as a pattern for remodelling this world; of happiness, because only in "knowledge" does the true or rational soul attain the fulfilment of its essential nature.

It is of course impossible to make anything like a concrete summary of Plato's ethics in a few paragraphs; but about what I shall need to say there will be no great difference of opinion. At least this will be true of the practical pattern of the good life which he draws for us, and from which most of his influence upon modern thought and culture has derived. This takes the form of an impressive rendering of the historic Greek ideal of moderation, proportion, harmony; and it has a permanent appeal in so far as such qualities do actually enter into goodness. So in terms of individual living it upholds the claims of an orderly and seemly and aesthetically pleasing satisfaction of desire under the control of mind or reason, in opposition alike to the chaotic and tumultuous gratification of particular desires and to an arid asceticism. In the same way on the social side it sets up the ideal of a state in which personal ambitions and the clash of warring factions have given place to a harmonious community of interest, and where each man by confining himself voluntarily and uncomplainingly to the specific function for which his nature fits him is ready to subordinate his private happiness to the demands of a single organized community governed by a common reason. Such an ideal, it is possible to argue, is likely to minimize, and in Plato's hands does minimize, certain requirements of which man's subsequent experience has increasingly revealed the need. It accepts too easily the assumption that human beings have determinate and determinable natures which can be fitted into a universal scheme of fixed social relationships without prejudice to a reasonable demand for personal good, and so without the inevitable appearance of a conflict between individuals and classes. It places too much faith in the power of a strictly regulated education and of custom guided from above to keep men from questioning whether in reality the limitations thus

imposed are genuinely justified in terms of their own satisfaction with the outcome. In particular it fails to give its proper place to the need for experimentalism if man is to discover his possibilities of good as a changing creature in a changing world, and badly overestimates the ability even of the wisest man to canalize human life through pure scientific reason in anticipation of such a growing experience. Nevertheless, as an ideal standard, rational harmony has unquestionably an important rôle to play as a constituent, if not as an inclusive definition, of the good or satisfying life.

It is not however with the content of Plato's ideal that I am here concerned but with its underlying principles. And concretely the issue turns on two alternatives. A justification of the Platonic notion of the good as a human concept might be put, and would most commonly be put in modern thought, in terms of the standard of human happiness itself; empirically man finds his truest satisfaction in a rational control of the desires rather than in excess and an anarchical freedom, and in submitting to a common benefit rather than in subordinating society to personal or class ambitions. And Plato does in fact argue that such an orderly and ordered experience is the only sure guarantee of human happinesss.

But it is not such concrete happiness that *makes* the ideal good; happiness is a consequence rather than an ultimate norm. As a standard, the content of happiness is of necessity dependent on a process of discovery that is bound to be tentative and groping and, possibly or even probably, irreducible to a single common measure. But for Plato such an experiential goal will unavoidably fall short. Ethical good, if it is to constitute science, *must* find its warrant in some rational source binding on every rational being alike; experience or experiment may give rise to right opinion, but in the nature of the case never to real knowledge. In its ultimate interpretation, therefore, the Good is not a specifically human concept; it is a higher category from which man and all his empirical notions of the good will need to be derived. Human teleology in its ordinary meaning is for Plato never constitutive, and he is inclined to treat it with something like distaste. The true "end" even of the most reputable sense—the sense of sight—is not vulgar utility, but the service which sight performs in revealing to the mind the order and

beauty of the heavenly bodies in their courses;[28] and this evidently implies that the mathematical relationships embodied in the universe are themselves good, and not first rendered good by some human purpose they may serve.[29] Only in one field is a "form" actually constituted by a human use. In the case of articles of human workmanship, like a bed, the "essence" of the ideal bed is definable in terms of the service it performs. But while such forms of artificial objects would seem to be called for by Plato's premises, and are occasionally referred to,[30] it is only very occasionally, and they evidently lie outside his main interest.

It is not enough for the philosopher, accordingly, that he should have an acquaintance with the good such as grows out even of the most intelligent "experience"; he must be able also to show *why* the virtues are good by showing how they are the necessary outcome of ultimate principles which approve themselves to pure intellect. Reason in ethics means not an adjustment of the empirical capacities of human nature to the conditions of its environment, to be tested by any man's felt satisfaction with the outcome; reason is a distinctive part of man's nature of a sort to impose its commands authoritatively on other and lower parts, and in it alone or, more strictly, in the real object which the exercise of mind discloses, the final nature of the good is located.[31] What *is* this object, then, from which human good derives?

Up to a point Plato's answer is explicit; it is order, harmony, proportion.[32] Order is not justified in terms of human life, but human life is justified in terms of order. One consequence following from this is the tone of disparagement that is apt to crop up in Plato's attitude toward the "merely" human. Not only can individual happiness enter no claims against the common good, but the common life itself is relatively insignificant when set alongside the universal cosmic order, so that possibly indeed we ought to look at the whole human race as just a plaything of the gods;[33] what

[28] *Tim.* 47; *Rep.* 530d.
[29] *Cf. Philebus* 51c for the beauties of geometry.
[30] *Crat.* 389b f. (*cf.* 390b); *Rep.* 596-7; *Phaedo* 78e; *Epis.* VII, 342d.
[31] *Tim.* 90b-d.
[32] *Gorg.* 493c, 504b f., 506e, 508a; *Rep.* 403a, 430e, 443de, 444d, 486d, 591d; *Phileb.* 26b, 64d ff.; *Tim.* 30a, 47d, 87c f.; *Laws* 689d, 691cd, 906c; *et passim.*
[33] *Laws* 644d, 803bc, 903bc. *Cf. Rep.* 604c.

lends significance to man and to the state alike is the embodiment in them of the ideal principles of balance and proportion. Only on such terms can we justify the displacement of intelligent experimentation by "science" as a disinterested intellectual discipline for which desire is not a datum but a recalcitrant, and on the whole a rather deplorable, occasion for the exercise of rational authority.

Meanwhile if we were to ask why order itself is good—as Plato fails to do—there are two answers possible. Plato himself assumes its goodness as self-evident; it is a premise which for the philosophic mind requires no proof. But even on his own terms there is a little more that might be said. Measure is *recognized* as good, and evokes our human love, primarily because for the thinker it has an inherent attractiveness and charm; it is an object of aesthetic appreciation, possessing as such that emotion-compelling beauty which is never far apart from the conception of goodness in Plato's pages.[34] And here of course the modern man very likely would go on to raise a further query: Why, he might ask, is beauty good? Is it not just for the reason that it gives rise to this peculiar sense of satisfaction? But Plato does not raise this question. Beauty likewise for him is good as such, self-evidently good; its ideal goodness is no doubt the source of satisfaction, but it is the goodness of beauty which explains the satisfaction and not the satisfaction that gives us the right to speak of beauty as a value.

Now in resolving ultimate goodness into order or measure we are once more, it might seem, brought within hailing distance of Aristotle and the "number" theory. However, at best a good deal will still remain to be done before such an identification can be found acceptable. Certainly we are still at a long remove from the "science" of mathematics in any technical sense. Whatever Plato's ultimate ambition, he does not even make a start toward deriving the principles of ethics or of statesmanship from such a science in its modern acceptation; in the existing state of mathematical theory he could not have done this even if by any chance the thing is possible. His actual procedure comes much closer to the practices of ordinary human debate. He starts with the abstract principles implied in order—stability, subordination, organic unity—which as has been said he takes as in themselves self-evi-

[34] *Cf. Phileb.* 64c-e.

dently good. Next he postulates as well, not indeed the actual variety of human nature, which because it fails to reveal at once an orderly pattern is aesthetically unpleasing and therefore to be kept outside the ideal picture,[35] but certain large empirical distinctions of abstract human type. The task of the philosopher-statesman is then to arrange these types in the relationships which are most satisfying to the order-lover's sense of proper subordination, and to devise ways, first for bringing into existence an actual State that shall in so far as possible embody the ideal form which alone has perfect being, and then for guaranteeing its persistence without change, since by hypothesis any alteration must of necessity be for the worse. It is because he thus works, not upward from the actual but downward from an ideal pattern revealing itself to mind in independence of phenomena, that none but the philosopher, again, has the slightest chance of discovering the true form of the State. We are left accordingly with two general problems: What more precisely is the Good-in-itself which lends reality to all human good? and, What is the specific nature of the intellectual process through which genuine "knowledge" is attainable? The two questions are connected very closely, and it will be convenient to begin with the second.

The point with which I am mainly here concerned will come into view if we try to determine more exactly the relationship between the two large interpretations or emphases that have made their appearance in the previous discussion. To the modern philosopher, influenced more especially by Hegel, it probably will seem that the most intelligible account of knowledge is in terms of *system*. What constitutes a virtue, for example, whether political or individual, is the possibility of so defining it that it may have a place in a harmonious order of experience that meets the intellectual demand for consistency, interdependence, stability and rational completeness. Pointing in the same direction is the importance for scientific method of classification or division, which aims at a definite number of specific and qualitatively limited sub-divisions.[36] On the other hand it would be possible to suppose that Plato is after something more than this—a method of deduction, namely, resting on mathematical science in the stricter sense. The

[35] *Cf. Rep.* 557c.

[36] *Cf. Phileb.* 16d ff.

difference may be illustrated in terms of aesthetics. For ordinary purposes it may be enough to stop with the direct aesthetic perception of harmonious relationships. But conceivably such a harmony may be capable of translation into mathematical terms; and if this is the case its mathematical expression will be the final desideratum of the theorist.

That this latter program Plato fails to carry through in practice is by itself no proof that it may not in his mind have represented an ideal; nor is there lacking a certain amount of evidence in the dialogues to support such a supposition. The central place of mathematics in Plato's system of education creates perhaps some presumption that he actually was looking in this direction. Again, while it doubtless would be unsafe to allow too much weight to his occasional attempts to derive various aspects of the social order from the principles of number—the size of the ideal state for example, or the laws of birth-control[37]—at the same time it is difficult to avoid altogether the impression that Plato takes this a little more seriously than critics have been ready to allow.[38] And in general it is number which, as has appeared in previous references, makes possible exact or scientific knowledge; in the *Timaeus* knowledge seems even to be identified literally with those simple and undeviating motions of the soul which copy the mathematical precision of the cosmic system, as against the irregular and disorderly motions that confuse and interfere with these.[39] Especially significant is the part which proportion and measure play in the whole Platonic ideal, since proportion and the "mean" imply the possibility at any rate of a numerical expression. So in the *Philebus* we find measure and definite quantity pretty thoroughly identified;

[37] *Laws* 737e f.; *Rep.* 546.

[38] The number 5040 is justified most obviously by its empirical convenience in terms of the subdivisions it permits; but also it would appear not to be without a certain intrinsic authority of its own. "My most excellent friends, be not slack to pay honor, as Nature ordains, to similarity and equality and identity and congruity in respect of number and of every influence productive of things fair and good"; each such portion or subdivision "must be regarded as a sacred gift of God, conformed to the months and to the revolution of the universe". And again, *à propos* of fixing the size of the utensils that citizens may possess: "He [the legislator] must recognize it as a universal rule that the divisions and variations of numbers are applicable to all purposes.—The lawgiver must keep all these in view and charge all the citizens to hold fast, so far as they can, to this organized numerical system; for in relation to economics, to politics and to all the arts, no single branch of educational science possesses so great an influence as the study of numbers." *Laws* 741a, 771b, 747ab.

[39] 43b f., 47c.

it is the class of the finite—equality and the double and anything which is a definite number or measure in relation to such a number or measure—which by being mixed with the infinite of more and less "puts an end to the differences between opposites and makes them commensurable and harmonious by the introduction of number", and in this way gives rise to the many beauties of the world of nature and the world of man.[40]

Here however a point is likely to arise which complicates the issue. It is perhaps worth noticing that the most unequivocal reference to the quantitative possibilities in the way of measuring excess and deficiency occurs in a passage where Socrates for the sake of argument is adopting the premises of a commonsense hedonism.[41] But a pleasure-calculus is of course something that Plato decisively rejects. His whole practical philosophy rests not on a quantitative calculation in this sense, but on a system of values to which the quantity of pleasure, in the form of intensity at any rate, is irrelevant;[42] it is such intrinsic value rather than anything belonging to pleasure in its own right which in the last resort decides what pleasures are to be regarded as true and desirable. The same thing comes to light in his doctrine of political equality. Here the simpler notion of equality as determined by measure, weight and number is subordinated to the more difficult principle of a "natural equality given to things unequal";[43] before, that is, we can attain an ideal justice we shall need to settle the relative degrees of rational importance attaching to the various men and classes in the state, and this involves estimates of value to which mere numerical calculation seems inadequate.

The nature of the distinction Plato himself formulates in terms of the presence of a norm; measure involves not simply a relation between the greater and the less, but their relation to a third thing—the "standard of the mean".[44] Now it may be possible, once more, that the ratio involved in every mean is *ideally* capable of being determined numerically; but Plato no more than Aristotle attempts to show this.[45] In terms of practical procedure the mean will be found assuming some underived principle of comparison; and such a principle is itself not a ratio but a value. This is implied

[40] 25a-26b.
[41] *Prot.* 356a-c, 357b.
[42] As appears from the *Philebus*, intensity as such is not measurable.
[43] *Laws* 757b-d.
[44] *Polit.* 283c-284e.
[45] *Cf. Rep.* 619a; *Laws* 728d f., 744de; *Phileb.* 26b.

in the frequent insistence in the earlier dialogues that ethics has to do not with the way of attaining some *de facto* and unexamined end but with the significance of the end itself. As the passage in the *Politicus* remarks, the mean is the moderate, the fitting, the opportune, the needful;[46] and if we go on to inquire, Fit for what? we are introduced almost inevitably to preferences which are humanistic rather than mathematical. Such a preference may take a variety of forms. Not infrequently it is hardly more than the Greek gentleman's instinctive and undebatable sense of what is decorous and seemly—the dislike of laughter for example, or of any other immoderate indulgence, as sinning against the precept of "nothing too much".[47] Or it may be the outcome of some empirical end or purpose.[48] Commonly it finds a backing also in a larger principle; thus the esteem felt for obedience to authority and a contentment with one's lot, for the "middle state of cheerfulness" as a condition of the soul, for a blend of high spirit and of gentleness in the ideal citizen avoiding savagery on the one hand and an undue docility and supineness on the other,[49] is partly, again, an immediate aesthetic preference, and in part it has its ground in the standard of an ultimate human satisfaction or welfare. Most of the detailed specifications of the ideal state have this latter justification.[50]

More ultimate still, and penetrating every corner of Plato's ideal state, are the abstracter demands which order as such involves as Plato thinks of it. Of the two ways in which political order might be justified—as a strait jacket for restraining the prodigality of human nature, or as a condition and starting point for enlarged opportunity and free experiment—it is the first, as has been said, to which he is inclined; and the resulting principles of stability, authority, discipline, aesthetic harmony, everywhere set standards therefore to which the outlines of the political community must conform. Deserving of some special notice in this connection is Plato's strong aesthetic preference for *simplicity*[51]—a preference reflected in his feeling for the beauty of straight lines and circular motions, and one which inevitably draws him away from much sympathy with the tangled life of concrete human beings toward

[46] 284e, 286d. *Cf. Phileb.* 66a.
[47] *Cf. Rep.* 388e, 425b; *Phileb.* 47a, 65d-66a.
[48] *Polit.* 286d f., 293b.
[49] *Laws* 792cd; *Rep.* 410c f.
[50] *Cf. Laws* 743c, 918bc; *Polit.* 293d
[51] *Cf. Phileb.* 51cd; *Tim.* 33b.

an artificially simplified ideal of essential man. Specifically it takes shape in the standard of "purity". Purity, conformity to type, points always toward simplicity of nature unobscured by the complications of the mixed; as such it has an intrinsic beauty for reflective contemplation which tends to disappear as complexity increases. Just as a little pure white is fairer than a larger quantity of white when it is mixed with other colors, so in the humanistic field the same aesthetic demand is everywhere in evidence. It influences Plato's judgments on the content of man's happiness; it is for this reason that a "good" pleasure must be free entirely from its opposite, pain, while knowledge likewise loses in purity and goodness in the degree that, through the intrusion of empirical elements, it departs from its essence—immutability and mathematical exactness.[52] It determines his rejection of the "mixed" types of art in favor of the simpler and more austere ones.[53] And it would not be easy to exaggerate the significance which the same principle possesses for the pattern of the ideal state. In particular, it is a main source of "one man, one task" as a fundamental social principle, and of various communistic features that grow out of this. Here utility no doubt also plays a part. But it is not merely in the interests of efficiency that Plato would have us limit each man strictly to one particular function; quite as important probably is his dislike of the whole notion of variety and complexity in human nature as derogating from a purity of type whose ideal form the mind can contemplate and rejoice in.[54] It is this which makes it so easy for him to sacrifice without regret all the concrete human joys that arise out of special tastes and personal relationships for the purely general goods that belong to all men alike by reason solely of their common nature.[55]

(To be concluded)

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[52] *Phileb.* 52d-53c, 58a ff. For a psychological reason for this exclusion of pain see *Philebus* 32ab. Of course, as an empiricist, Plato cannot carry out such a principle consistently; the whole thesis of the *Philebus* is that in the "mixed" life of pleasure and knowledge the good *for man* consists. But this is because man belongs to the natural world; ideally we should expect pleasure to be excluded, as we seem bound to believe it is in the life of God (22c, 33b).

[53] *Rep.* 397d.

[54] *Rep.* 397e.

[55] *Rep.* 462a-e.

CAUSALITY AND RECENT PHYSICS

THE growing interest in physical sciences among the educated public seems to have begun immediately after the war, receiving its impetus from the brilliant researches promoted by the General Theory of Relativity and the Quantum Theory, and being sustained by the application of these in the sphere of astrophysics and cosmology. Physics which seemed at the close of the last century to have reached a certain finish—the disciples of Newton thought the same in the early part of the eighteenth century—has in the last thirty years displayed a greater vitality and capacity for development than almost any other branch of experimental science, and represents today one of the most important expressions of the higher activities of human thought.

The radical tendency of the age, its dislike of authority, its demand for something totally different from the established order, was reflected in the enthusiasm with which Einstein's epoch-making theory was at first greeted outside of strictly scientific circles, that is, in popular and philosophical circles,[1] which are for the most part, essentially unscientific, was due to the belief that it entailed a break with previous knowledge and involved an overthrow of Newtonian or Classical Physics; whereas it constituted an expansion, a refinement and a crowning of Newtonian views. Classical dynamics is contained as a limiting case in relativistic dynamics. When Heisenberg enunciated his Uncertainty-Relation, it was immediately interpreted among physicists with idealistic and romantic leanings as implying a contradiction of the universality of the causal principle and the definite overthrow of scientific determinism. With the denial of the validity of the principle of causation and determinism, goes scientific materialism, they said; the result is a free universe, an open world; though why matter might not be as indeterminate as mind is not immediately obvious.

Sir James Jeans, who proclaims himself a whole-hearted Berkeleian, evidently without appreciating the difficulties of Berkeley's idealistic hypothesis, stated categorically in his *Mysterious Universe*—rendered not less mysterious through his treatment of

[1]Edwin Schroedinger has suggested that physics has fallen under this influence in an essay entitled: *Ist die Naturwissenschaft Milieubedingt?* 1932.

it—that the principle of causation as an axiom of scientific investigation had been discredited by the developments of the Quantum Theory.[2] But he did not state that both Einstein and Planck are opposed to this view. These leaders of contemporary science maintain that it is not the principle itself that has broken down, but a traditional and faulty formulation of it. Einstein has been guided by a strict formulation of this principle throughout his wonderful researches. The more philosophical Planck has of recent years spent much time in lecturing and writing on the causal controversy. He is in accord with Kant, and we may add, with David Hume in regarding causality as an indispensable principle of experimental inference; and yet, he is certainly no upholder of traditional views, seeing that he has headed one of the greatest revolutions in modern physics.

Sir Arthur Eddington and Herman Weyl are prominent believers in indeterminism and have attacked with scientific and quasi-philosophical arguments the belief in the universality of the causal principle, at least in any intelligible sense. In an address on *Science and Religion,* 1930, the former declared: "So far as we have yet gone in our probing of the material universe, we cannot find a particle of evidence in favour of determinism. There is no need any longer to doubt our intuition of Free Will." On the same basis, although apparently with less assurance, Sir James Jeans asserts: "Science has no longer any unanswerable arguments to bring against our innate conviction of Free Will." These are certainly strong and rather astonishing statements; strong, because they involve appeals to psychology in the form of intuitions and innate knowledge which we thought had been cast out forever by

[2] Chap. v. But in his Presidential Address at the British Association Meeting, 1934, he no longer upholds the fallacy that since electrons do not appear to behave in accordance with "materialistic mechanics", their movements are uncaused. Jeans, who performs with great ease remarkable acrobatic feats in his philosophical interpretation of the New Physics, particularly in his *New Background of Science,* in which is reflected the influence of Descartes and F. H. Bradley, without, it seems, the ultimate import of the latter's metaphysic, namely, to discredit experimental knowledge, being understood, declares in his recent address, that the wave picture is more in accord with reality than the particle picture; that waves are nature itself (*ibid.* 10). But "the truer wave picture is deterministic", and "the particle picture makes fate more powerful and more all-pervading than ever before" (*ibid.* 12-13). Nevertheless, "my own opinion is that the problem of free-will will continue to provide material for fruitless discussion until the end of eternity." Certainly; if one is not consistent or not clear as to definitions!

John Locke; astonishing, considering their source, because the scientists in question have spent a large part of their lives in applying mathematical formulae to natural phenomena and in making predictions, some of which have been verified. It is precisely such predictions, illustrating the success of scientific method, based on the law of causality, that support a large-scale determinism. It is therefore surprising to hear a scientist declare in face of the great syntheses and laws of modern science, that there is not a particle of evidence in favor of determinism. Such a statement is contrary to his own aims and achievements. Against the material success of our scientific age based on mathematical calculations, which have led to brilliant predictions, an individual intuition or conviction of free will (or, better, freedom of willing, since an abstract entity such as Will is not known to Psychologists), seems to count for little. Is not the behavior of individuals frequently predictable? And is it not the better predictable the better the individuals are known?

Hume and Kant, Robert Mayer and Planck are among those who in modern and recent times have made the most valuable contributions to the problem of causation, including, firstly, the meaning of the causal relation, and secondly, the significance of the causal principle. In lesser degree, Schopenhauer, J. S. Mill and Ernst Mach have aided in this direction. This list of thinkers shows how close are the aims of theoretical philosophy and science, namely, to understand the reality or universe of which we are a part. Hume was the first to grasp in all its bearings the importance of the causal principle for inductive or experimental science; at the same time, he brought the category out of the nebulous region of rationalistic metaphysics, divested it of a traditional mystery, and gave it a positive character. Ernst Mach stood on the same ground as David Hume. Max Planck takes a view of the significance of the principle of causation similar to Kant, although differing from him both as regards its formulation and the criterion of causal connection. Respecting the latter, Kant's view was very indefinite. A logical mainspring in the beautiful reasonings by which Einstein was led to develop the Relativity-Theory was a strict application of the causal relation, according to which only those phenomena can be regarded as causally connected which

are capable of being observed. Thus he got rid of the ether or ethers and forces at a distance. This is in accord with Newton's sound demand for *verae causae* in the explanation of phenomena.

Now the so-called freedom of the will is not a *vera causa*, because the only psychological support this belief can fall back upon is the existence of a *feeling* of freedom or absence of compulsion which, as Spinoza knew, is compatible with the existence of causes determining human behavior. Psychological analysis can show how it comes about that in probably the great majority of instances human beings are, and must remain, unaware of the causes actuating them. Such lack of knowledge is not a sufficient ground for disbelief. "The arguments of science against the 'innate conviction of Free-Will' are", says a clear-headed physicist, "against the validity of the innate conviction as an evidential criterion and against importing the term *Free-Will* into any scientific discussion as not corresponding to any so far isolated feature."[3]

The principle of causation is the principle of the unideterminism of events. It asserts that natural changes are interconnected according to laws; that causal relations are relations of invariable and constant sequence, expressing, in all instances of measurable phenomena, quantitative identities. In physics a causal relation is expressed in the form of a differential equation between natural changes. An excellent and simple example is that expressed in the formula: $\frac{d^2s}{dt^2} = g$. Causation is the expression of the substance of nature conceived dynamically, and is ultimately as inexplicable as the existence of substance, *i.e.*, the independent background of the cause of our perceptions, of which it is the visible process.[4] If there were no changes in nature, there would be no occasion for applying the causal principle, and the concept itself would probably never have been developed. Change is as inexplicable as is ultimately the universe itself. But within the limits of knowledge and experimental science the principle of causality is of so fundamental a character that if its validity be denied you cannot reasonably make any inference from the observed to the unobserved. In this

[3] H. Levy, *Universe of Science* 169.

[4] Cf. article by Loewenberg in the comprehensive volume on *Causality*, published by the University of California Press 1932, pp. 3-37.

belief both Hume and Kant agreed, while differing, according to their different concepts of experience, as to the ground on which the belief can be based. These two great thinkers saw clearly that all reasoning regarding the course of nature is causal, and that if nature followed no laws, all such inference must fail.[5]

Those who desire and demand a certain element of caprice or indeterminism in the world because they think, as we believe mistakenly, that ethics demands a freedom of willing, seem not to realize that in this case we could not be certain of anything outside our own personal experience, and of this we could be assured only at the present moment, since memory itself depends on causal laws. If we cannot infer the existence of other persons, how much less can be deduced the existence of God, so much desired by Eddington and Weyl? If the causal postulate goes, why should not the arrangement of the universe have arisen spontaneously, and even its Substance, *e.g.*, the great soapbubble of Sir James Jeans, out of nothing?

Nevertheless, it has been argued that recent developments of physical science, as presented by the Quantum Theory, lead to the conclusion that the universality of the causal principle must be surrendered. The Principle of Indeterminacy, so-called, affords a strong argument, it is said, against scientific determinism.

The indivisibility of a quantum places a limit to the exactness with which both the position and the momentum of a microphysical particle can be simultaneously determined. (We shall not complicate the argument by a discussion of whether reality is continuous or discrete. C. G. Darwin in his *New Conceptions of Matter*, Chap. iv, suggests that the wave-aspect of things is objective, whereas the particle-aspect is subjective, being the work of the mind. But both may be objective; for when an electron strikes a metal film and comes to rest, it appears to show itself as a system of waves.) Either the position or the momentum can be determined with great accuracy; but the exact determination of the one interferes with the exact determination of the other. For instance, in determining the positional co-ordinate of a particle a microscope would generally be used; to do this, the particle has to be illumi-

[5] What Hume questioned was a certain interpretation of the causal relation; and he denied that the principle was one of pure reason or logic.

nated, which involves a radiation falling on it. But the radiation exerts a pressure, which gives the particle a momentum, so that it moves from the position which we try accurately to determine. This led Heisenberg to enunciate an Uncertainty-Relation in the determination of the velocity and position of such a particle. This determination is of the same value as Planck's constant h, which is extremely small. In consequence of this, Heisenberg, Schroedinger and Bohr have declared that, since we cannot make the determinations necessary for an application of the principle of causality, the latter becomes shorn of its importance. Sir Arthur Eddington and Herman Weyl have strangely erected this negative situation into a positive Principle of Indeterminacy, in which they have discovered God;[6] for the facts, as interpreted by these physicists, exclude the formulation of any principle or law.

Now Planck has pointed out more than once, and again in his most recent philosophical work, *Where is Science Going?*, that the above conclusion is not a necessary consequence of the Uncertainty-Relation, because it is not necessary that both the positions and velocities of the elements shall be determinable in order that the behavior of any system can be inferred, that is, predicted. It is sufficient for this purpose that the configurations of the elements at two different instants can be determined, and the Uncertainty-Relation appears to offer no hindrance to this. But apart from this, although predictability is a most important and valuable consequence of causal knowledge, yet the validity of the causal principle, as a methodological standard, does not stand or fall with capacity to predict or the opposite in individual instances. Statistics show that about three tenths of the weather-forecasts are erroneous, from which no scientist, I imagine, will infer that the weather is not determined, that is to say, definitely caused; but rather that it exceeds human means to determine accurately all the factors involved in the changes. Similarly, in many instances of cerebral change, the conditions of experimentation may make it impossible

[6] Bertrand Russell has wittily, if not quite accurately, remarked: "Sir Arthur Eddington deduces religion from the fact that atoms do not obey the laws of mathematics: Sir James Jeans deduces it from the fact that they do" (*Scientific Outlook* 112). The great soap bubble has, in the latter case, been blown by a Deity, who is interested in its mathematical properties. In later expositions, Jeans has dropped the mathematical Deity. His idealism is more impersonal and cosmothetic.

to follow the changes in the convolutions, and show the exact application of the causal principle. From this it would not be legitimate to infer that the course of nature is indetermined. All one can infer from it is that it is not in all instances measurable. "The indeterminism which belongs to Quantum Physics", declared Einstein recently, "is a subjective indeterminism. It is related to our inability to follow the course of individual atoms and forecast their activities." In his Presidential Address already referred to, Sir James Jeans expresses the view that "the indeterminacy of the particle-picture seems to reside in our own minds rather than in Nature". Thus his philosophical idealism expresses what represents a limit of knowledge.

Whatever the indeterminists, whether they be physicists or philosophers, may assert, absence of causation, the origin of something out of nothing, is not intelligible. If the course of events is not determined, it is not possible to understand that, or how, anything occurs. Theoretically, it is not possible to show that a given group of phenomena does not conform to any laws. All that can be shown is that the laws have not been discovered.[7]

An acute thinker, J. E. Turner, has pointed out that the importance attached to the Principle of Indeterminacy, so-called, has been largely due to an ambiguity in the word 'determined'. An event is determined when it is caused; a quantity is determined when it is measured. If the velocity and position of a microphysical particle remain undetermined, this means that they cannot be measured. And this is because the measurement involves a physical process which has, in turn, an effect on what is measured. In this there is nothing to prove that any physical event is uncaused. Quite the contrary! The attempt to know is here defeated through the introduction of new factors into the determination. The argument, therefore, that since a change cannot be determined in the sense of being measured, it is not determined in the quite different sense of being caused, involves a fallacy of ambiguity. What the Uncertainty-Relation points to is not that the course of nature is indeterminate, but that the experimental apparatus of physics is not

[7] "To say that the arrival of a train in Berlin is indetermined is to talk nonsense, unless you say in regard to what it is indetermined. If it arrives at all, it is determined by something. The same is true of the course of the atoms." Einstein.

adequate to the mathematical developments of this science. The difficulties of a sufficiently delicate experimental technique at the limits of visibility must necessarily be colossal. "It is not unnatural", says Levy, "that the form of prediction, capable of comparatively easy application to large-scale operations, where isolated systems are the subject of study, should break down at some stage."[8] One must distinguish, as Planck has so strongly insisted, between the validity of the causal principle and the practicability of its application.

For many years, various branches of science have employed statistics, and have misleadingly spoken of statistical causality. Statistics deal with group events and averages. Physicists have recently imported the concept of statistical laws into their science, and appear inclined to refer to such as if they were opposed to causal laws, or as if statistics could wholly take the place of causal knowledge. But statistical laws, so-called, and laws of probability, which are a *faute de mieux* in economics, involve the assumption of causation in the individual instances, included in the statistics. According to the statistics of insurance companies, so many thousand persons die each year of certain diseases, at a certain age, and in certain professions. It is on the basis of such statistics that insurance policies are framed. But these statistics have nothing to do with the cause of death in the case of an insured individual, and would themselves be without any meaning because devoid of all basis, if there were no causal relations obtaining in the individual instances.

Whatever inferences may be drawn from the most recent theories of the atom, they have no bearing, as Bertrand Russell has pointed out, on the causation of human behavior, which, involving large and visible motions, comes well within the scope of known laws and statistical relations. Causal inferences and statistical methods simply represent different applications of scientific methods at different levels of experience.

Too much importance has, we think, been attributed to the 'Uncertainty-Relation' in regard to the laws both of physics and psychology. The analogy which some scientists have attempted to

[8] *Universe of Science* 162; a work which, particularly in Chap. iv, appears to us to whittle away the speculations of Sir Arthur Eddington.

draw between atomic indeterminateness and freedom of willing is neither clear nor valuable. C. G. Darwin maintains that the Uncertainty-Relation cannot free us from determinism, because it has no bearing whatever on the problem of human behavior.[9] On the other hand, the assumption that human actions are caused like other events is the theoretical foundation of scientific psychology, as opposed to a literary psychology like Bergson's; it is the practical postulate of all rational education and training of the will. An undetermined will would be a sorry possession for mankind; it would not be subject to the influence of rational motives. The mathematical and physical free-willists appear to ignore the teachings of recent psychology and, in addition, strike one as rather amateurish in philosophical criticism. Some of their interpretations are an extraordinary medley of personal and scientific viewpoints, *e.g.*, Sir Arthur Eddington's analysis of the effects of a mental decision.[10] It reminds us of Descartes' pre-scientific argument about the effect of the mind on the brain. These scientists fail either to give any positive definition of free will—Bergson advised his followers not to attempt this—which seems to be the last remnant of occult forces or qualities, or to show how determinism conflicts with a philosophical ethic. They rather assume the latter, ignoring the fact that from the days of the Stoics down to the present time, some of the most important schools of ethics and some clear-headed theologians have been determinists.

There is an interesting and amusing analogy between the attitude of mathematical indeterminists, like Eddington and Weyl, and that of biological indeterminists like Bergson. The work of the physicists has led to an extension of the field of scientific determinism; and the theories of Bergson, wherever they are intelligible —and some of the acutest minds have found his doctrine of time unintelligible—could not have been developed without the use of logic and language, which, the philosopher has again and again declared, falsify reality and mislead us in the way of knowledge. In casting aside logic and the principles of science, are not these physicists approaching the position so much lauded by Bergson, and represented according to him preëminently by certain insects

[9] *New Conceptions of Matter* 116-119.
[10] See *Nature of the Physical World* 312.

which, because of their instincts and intuitions, are said to be nearer the heart of reality than are those less happily constituted human beings who are limited to, and by, the use of intelligence? The demands of the 'unscientific heart', put forward against the teachings of reason and objective fact, do not appear to be better situated than are the instinctive operations of Bergson's prize animals, which careful observations show to be so far from being infallible, that they rather resemble, at times, the behavior of our 'skilled' plumbers.[11]

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[11] Questions of definition appear to enter into discussions of determinism and indeterminism. In an instructive article, entitled "Physics and Philosophy" in *Philosophy*, January 1933, Sir Arthur Eddington speaks of deterministic and indeterministic types of law. We should have supposed that all laws are deterministic. "Determinism", he writes there on pp. 39, 40, "is usually understood to assert that there exist deterministic laws sufficient to deduce all future events from presently existing laws." It need not be, and is not, taken in any such sense in this paper. Belief in the definite causation of events is not synonymous either with Laplacean belief in the uniformity of nature, or with predictability of the next state of the universe from the present. Causality is a postulate of history in which events are all more or less unique and can hardly be foretold.

In *New Pathways in Science*, 1935, Eddington, while referring to the revolution of theory which has expelled determinism from physics (87), yet admits that determinism is not disproved by physics (85). Not recognizing the rôle of logical elements in experience, of which pure mathematics affords an eminent illustration, he appears to think that the principle of causality, if valid, should be capable of experimental proof in every instance of change. To us it appears that quantum mechanics has not really introduced anti-causal factors into physics. The attack on the principle of causality, though stimulated by certain experimental inabilities of physics, shows rather that an irrational and mystical attitude, which so frequently lurks in the background, even among scientists, is now endeavoring to use 'the revolution in physics' in order to support a traditional idealistic metaphysics. This is emphasized in a comprehensive treatise by Phillip Frank, *Das Kausalgesetz und Seine Grenzen*, 1932.

SOME HISTORICAL STEPS TOWARDS PARALLELISM[1]

THE function of psycho-physical parallelism within psychology is somewhat indeterminate. Now and then it is declared acceptable as a working hypothesis. It permits a systematic correlation of subjective experience with observable conditions. The utility ascribed to the hypothesis depends in part upon the type of psychology to which reference is made. Its employment may be advocated in order that the psychologist may escape from the metaphysical problem of the relation between mind and body. To other psychologists the hypothesis is merely an historical monument referring to the day when psychology had not secured its freedom from metaphysics.

Whatever attitude toward parallelism a psychologist may take, he is tacitly recognizing that the hypothesis is not the creation of psychological inquiry. The doctrine was not formulated to organize results attained by specific psychological investigations. On the contrary, it expresses the general metaphysical position under the auspices of which modern psychological inquiry attained its alleged independence. Parallelism affords a striking instance of the controlling power of metaphysical ideas and their consequences for scientific enterprises.

Parallelism emerged from an intricate context within which occurred an interplay of epistemological, metaphysical, and theological influences. The hypothesis did not arise from psychological inquiry, and it was not formulated for the sake of psychology. On the contrary, it came into being because of an effort to provide a metaphysics for physical science, and its function was metaphysical and even theological. Psychology, as that

[1] The term parallelism is used in the sense assigned by MacDougall. He first states that the term is used to denote all doctrines that deny psycho-physical interaction, and then gives a stricter account of its meaning. It implies that "physical and psychical processes are equally real; but there is no causal relation between psychical and physical processes; the two series of events, the psychical processes of any mind and the physical processes of the brain with which they are associated, merely accompany one another in time: their relation is one of simple concomitance only. . . . Within each series the law of causation holds good, the successive steps being related to the preceding and succeeding steps as effects and causes; but no causal links stretch across from one series to the other." *Body and Mind*, 3rd. ed., Methuen and Co., London, 1915, p. 131.

term is understood in the history of modern thought, is really a by-product, a somewhat unexpected incident in a much larger story. It is a by-product of metaphysical, theological, and methodological interests in the science of physical nature.

It must be recognized that parallelism is a specifically modern doctrine. It is neither mediaeval nor ancient, just as the physics with which it must be associated is neither mediaeval nor ancient. The doctrine usually taken as the opponent of parallelism, that is, interactionism, is likewise essentially modern. Neither psycho-physical parallelism, nor the hypothesis of the interaction of soul and body, could come into being until the Cartesian doctrine concerning body and soul had been formulated. Beneath these hypotheses lie the fundamental ideas of modern physical science. Animism has, of course, a long history. Descartes, reckoning with a new program for a universal science of nature, revised in radical fashion the animistic tradition. The setting within which psychological inquiry must be established was defined by these conditions. Reflection sought to make adjustments between the revised tradition, the new scientific conceptions, and ethico-theological interests. These adjustments determined what a positive study of mind, of consciousness, or of subjective experience must be. It is not too much to assert that psychology had to be whatever the new physics and the related metaphysics permitted it to be. Until recent times at least it preserved in its terminology and methods the influence of these adjustments. Psycho-physical parallelism appeared when the denial of interaction between soul and body emerged in the development of the Cartesian tradition. This denial may be viewed both as a consequence of metaphysics and as a demand for metaphysics. In either event, psycho-physical parallelism appeared as a device for satisfying the demands of metaphysics and theology in the context of a new physics.

Psycho-physical parallelism, then, assumed a double rôle: it purported to be a solution of the body-mind problem; and it served to define the province and the problem of psychology. Here and there, of course, psychological investigations reflected positions opposed to the Cartesian. But even in such cases the general context was maintained. In all quarters the situation was fundamentally the same. The problem was that of adjusting the

new view of nature with the animistic tradition and its associated interests.

The parallelistic hypothesis was not attained in a single step. We may discern, within the Cartesian tradition, a series of approximations to the hypothesis. It is the purpose of this essay to indicate some of the steps that prepared the way for the statement of the hypothesis.[2] In this way, perhaps, light may be thrown upon the historical function of the hypothesis in the development of psychology. The psychologist who adopts psycho-physical parallelism as a device for escaping metaphysics presents an interesting paradox. By a curious inversion, he seeks to avoid metaphysics by adopting a metaphysics.

The metaphysical problem the psychologist wishes to avoid is that usually described as the body-mind problem. More specifically, it is the perplexities of interactionism from which he seeks relief. The psychologist's effort points to an important historical fact, to the fact that parallelism is itself a reaction against interactionism. When the animistic tradition was revised by Descartes, all questions concerning the relation of mind and body were of necessity re-formulated. The reformulation, however, made the interaction of body and soul less rather than more intelligible. Psycho-physical parallelism emerged precisely in the measure in which this came to be recognized.

The movement towards parallelism, then, is a consequence of the new ideas of which Cartesianism is the outstanding expression. In Descartes' work traditional terminology received new meanings. More than one of his followers, and some of his opponents, recognized this. Some of the Cartesians, indeed, felt the need of emphasizing this. The Cartesian definitions of spirit and matter, of soul and body, of what it means to be 'objective' or 'subjective', were regarded as *new* definitions. It is misleading to assume equivalences between Cartesian and mediaeval uses of the same or

[2] This paper is based primarily upon a study of the Cartesian tradition as represented in the work of certain followers and opponents. Details and documentation will be found in papers on Louis de la Chambre, Clerselier and Rohault, Samuel Sorbiere, Geraud de Cordemoy, and Clauberg, in this *Review* for July, September, and November, 1930, May, 1931, November, 1932, and November and January, 1933 and 1934. A study of the post-Cartesian controversy concerning the Animal Soul appears in the third volume of *Studies in the History of Ideas*, Columbia University Press, 1935, pp. 115-177.

similar terms. Descartes' philosophy is of course in the Augustinian tradition. We must emphasize, however, that his followers, even when recognizing this continuity, were keenly aware that it must not be over-emphasized. To think with Descartes, they knew, meant to think in new ways, in terms of new ideas, and in an unfamiliar terminological context. Louis de la Forge, for example, makes this abundantly clear.[3] Hitherto, he maintains, the ideas of Descartes concerning spirit, mind, matter, the soul, may have been anticipated—particularly in the tradition coming from Plato through Augustine—but anticipation was not attainment. De la Forge admits that St. Augustine, for example, did not make the mistake of confusing spirit with the animal spirit or of identifying processes in the brain with processes in the mind. He urges, however, with equal emphasis, that Augustine did not arrive at the Cartesian truths concerning the soul and mind. De la Forge's reason for this judgment is of the first importance for understanding the place and influence of the Cartesian philosophy in its contemporary setting. The novelty of the latter philosophy, as de la Forge makes clear, lay precisely in this, that *Descartes for the first time in history had achieved an adequate, a true, definition of matter.* The ideas concerning the soul prevailing in any period in the past had reflected the conception of matter then commanding acceptance. Not even St. Augustine, spiritual forebear of Descartes that he was, had a sound notion of the soul for just the reason that he had not known what matter truly is. All the more would it be the case that outside the Augustinian tradition this failure occurred. The attitude of most Cartesian followers may safely be described in some such way as this: You cannot attribute to a philosophy in the past a Cartesian conception of mind or spirit or soul unless you can equally attribute a Cartesian definition of matter to the same philosophy. The definition of matter is, however, the crucial point of the new philosophy, defining the context within which its terms must be comprehended. Therefore, since no one before Descartes knew what matter is, no one knew what mind, or soul, or spirit, or thought are.

Thus reflection in Cartesian circles was aware of this dissimi-

[3] The paper on de la Forge may be consulted for a more extended discussion of this point.

larity of contexts within which terms received definition.[4] For the convinced Cartesian mediaeval conceptions of matter and form and of their union in a substance, that is, a thing, were doubly confused. The mediaevalist might say: a physical thing is corporeal, constituted by the compresence of form (or forms) and matter. The form then, as the component of a thing, is physical, but not material. Indeed, for such a thinker as St. Bonaventura, matter is not necessarily corporeal or 'physical'. It is corporeal and a component of a physical thing if it be informed by the form of corporeality or a 'corporeal' form; united with a different form, matter may be incorporeal—a soul or an angel. For a Cartesian, however, all of this would indicate that before Descartes no one had a clear idea as to the nature of matter and consequently could not define a soul. We have adequate ideas of both matter and spirit—and then we have Cartesian ideas—or we have adequate ideas of neither.

In the new context mind and matter are each substances, possessing essential attributes. So diverse are these attributes that mind and matter-substance are mutually exclusive and antithetical in properties. In these circumstances, if a thing be said to possess form, then by form we must mean the configurations to be exploited in a mathematical physics. On the other hand, if by form we are to signify something non-corporeal and non-physical, then a form must be either a spiritual substance or an idea within and dependent upon that substance. The point, for the Cartesian as against the opposition, is not that body and soul, matter and spirit, are different, but rather that this difference is one of substance and the two substances, antithetical in property, divide finite existence between them. Contemporaries of every school were prepared to admit a difference between thought, mind, or the soul, and body or matter. In some quarters it was granted that the essence of mind

[4] The animal-soul controversy makes this abundantly clear. Many Cartesians insist that, if a soul is a spiritual substance the essence of which is thought, we must mean this whenever we use the term. Hence the dilemma arises with respect to an alleged animal soul: if the animal soul *is* a soul, then there can be no essential difference between the soul of the animal and the soul of man; if, on the other hand, the alleged animal soul differs significantly from the human, the expression is meaningless, and there is no animal soul whatever. Either animals are combinations of soul and body—and so are identical in principle with man—or else they have no soul in any sensible employment of the term. In the latter case, it is reasonable to view them as machines. Régis makes this point emphatically.

might be thought, and yet thinking might be a function of matter.[5] The Aristoteleans might assert the incorporeality of the rational soul, while urging that the vegetative and sensitive souls were functions of corporeality. For the Cartesian this was inadequate, confused, and even verbal. Again, wherever the Cartesian influence penetrated, there came recognition of the confusions due to the long tradition defining spirit as subtle matter. This notion, associated with that of the animal spirits, eased body-mind difficulties for some contemporaries.[6] For a Cartesian, however, attenuation cannot define incorporeality. If potency and act are to receive Cartesian meanings, then the terms will mean one thing with respect to matter-substance, and another with respect to spirit. Between matter and spirit there can be no *tertium quid*. Existence is never both matter and spirit, but always either one or the other. This in itself expresses the radical difference of context between Scholasticism and the Cartesian point of view.

The new context, as Cartesians realized, gave man a place within creation that is startling and unique. Nothing can be both matter and spirit. Nevertheless, man is both. He is therefore a unity of composition and not a unity of nature. Man alone represents this compresence of substances. Since the animals are machines, they do not possess souls. Or, what amounts to the same thing, since animals have no souls, they are machines. Only in man are thought and nature conjoined. From this fact there follow important consequences. A problem which involves questions concerning thought or incorporeal being can be solved only by a study of man. The human being thus becomes the central fact for epistemology, metaphysics and theology. Or, stating the point more accurately, the soul and its conjunction with an animal body is this central fact. For this reason the Cartesian frequently defines metaphysics as the study of spiritual beings. Metaphysics in some sense is confined to the human soul, the angels and God. In this the Cartesians were consistent enough. Metaphysics does not grow out of, or form a superstructure, for physics. Theology and metaphysics furnish a

[5] For an illustration, see *Objections* II.

[6] Bayle warns the learned world not to be misled by the word 'spirit'. The 'spirits' of the 'chymists', and the animal spirits in the nerves, or subtle matter, denote matter in the same sense in which water or minerals are said to be material. Bayle must have felt that the caution was needed.

basis for physics. In a sense, physics deals with whatever is excluded from metaphysics, once the field of physics and the validity of the enterprise have received metaphysical confirmation. Thus the human body, the plants and animals, are merely portions of the subject-matter of physics. Their significance for metaphysics is indirect. Their metaphysical interest is absorbed into the general interest of physics for metaphysics and theology .

This, however, is not the whole story. The study of man, in the end, must provide the means for an account of the relation of nature and spirit, for in man alone do these two come together. The adjustment of physical science to the claims of morality, religion and theology depends upon the study of man. Physics by itself is incapable of throwing light upon the problem. It may discover that nature is mechanism—but can never discover that mechanism is evidence of the existence of God. Metaphysics, surveying the soul and its junction with matter, must evaluate physics for theological uses. Metaphysics, then, centering upon the investigation of the soul, becomes the enterprise of adjusting the claims of science and the demands of morality and religion.[7]

The consequences are not yet exhausted. The Cartesian context imposes the problem of discovering a new content for the old terms. Nature, now defined in terms of the new conception of matter, cannot directly contribute to the discovery of spirit. In a hopelessly negative sense, physics may assure us that 'mind', 'soul' and 'spirit', possess meanings antithetical to the meaning of matter. Thus we know that spirit is unextended; we know that, if corporeality means extension, then spirit is incorporeal. A positive content for the terms, however, can be found only by a scrutiny of immediate experience. The test of what belongs to spiritual sub-

[7] The controversy concerning the animal soul is peculiarly illuminating with respect to contemporary attitudes. Concerning such questions as to how animals could get along without souls, or the purposive functioning of animal bodies, science could be content with mechanism. There was an aggravating problem, with respect to man—*i.e.*, what the possession of a sould could contribute to the career of man's body—and the defenders of animal souls were not slow to charge that, if brutes could dispense with souls, then man too does not need an additional substance. The argument was powerful, for it would be impious to set limits to God's competence as a designer of machines. But such arguments were really devices of controversy. For the true Cartesian what animals and the human body are is the question of science. Animals are not thinkers or knowers. If nature as a machine with its own laws can be understood as the product of a designing God, then the life of organized bodies presents no difficulty in principle.

stance must be found in immediate experience. Spirit or mind is the thing that thinks, and this thing that thinks exhibits its nature not in thinking alone but also in sensing, feeling and willing. The study of spirit is not the investigation of form and logical structure, but the apprehension of the contents of consciousness. This is certainly not what Descartes had in mind in the First Meditation—but it is what he reached in the Sixth. And with this the point of departure for a Cartesian was fixed.

Thus we perceive how Descartes, writing a metaphysics that should insure a universal science of nature, produced the psychophysical problem. The problem of man, of this exceptional unity of composition, is that of discovering how consciousness and things, how immediate experience and an alien world of objects, how personality and mechanism, can be related. The question must be resolved upon the dualistic foundation and not despite it. Moreover, the question is real: for the conviction is somehow rooted in the facts. Indeed, only if man be a unity is it possible to understand how consciousness could discover the outer world and the soul become convinced that it has a body.

Given these conditions, what is the central point upon which a science and a metaphysics of man must be pivoted? It is this: the substantial components of man's nature retain that characteristic of independence which is the very mark of substance. A unity of composition—which means an external unity—must take the form of a precise inter-adjustment of components without prejudice to the essential and mutual exclusiveness of spiritual and material substances. Experience forces upon us the conviction that mind influences body and body influences mind. At least these words describe even to common sense an almost inevitable belief. Since Descartes has discovered at last what mind is and what body, it is now possible to discover also the facts represented, with or without distortion, in the belief. Beneath this belief lies a unity of composition, and the belief must reflect an interrelation between component substances. A Cartesian, Louis de la Forge or any other, must view the situation in this light.

The exact point, however, has not yet been precisely stated. We must add that each soul or mind is the soul or mind of somebody; it is a consciousness or self, or the substantial basis of a conscious-

ness or self. Moreover, each soul seems to be in possesion, not of *a* body, but of *the*, of *its*, body. A soul's relation to the world of things is exclusively by way of a particular body. In perceiving, in thinking, feeling and willing and in every spiritual activity, Peter's mind is engaged with contents that somehow reflect the career, the organization and the environment of Peter's body, and not of body in general or of some other soul's body, let us say, Paul's. Bergson has described the fact in defining the body as a privileged image. There may be events in Peter's body that are not reflected in Peter's soul; and possibly there are occurrences within Peter's spiritual substance owning no relation to Peter's body. But these exceptions, if they exist, do not affect the conclusion that the unity of composition must be at least a partial and systematic relation between one sort of events and another. The unity implies a conformity, or, to use a favored expression of the Cartesians, a proportionality between the components of the composition. It is a functional coöperation or correlation. Metaphysical principles lead us to account for the commonsense belief by pointing to the necessity for such a definition of the unity of composition. In return, from the popular belief so grounded we must pass back to a metaphysical and theological completion of the explanation. We may regard the pineal-gland theory as a *deus ex machina*. It was derided by Descartes' Peripatetic opponents—on their principles such an hypothesis was neither necessary nor intelligible. But Cartesians could not deride it: the god from the machine is the evidence of God.

Even for Locke, for whom matter may conceivably be the seat of thought, the adjustment of immediate experience to what he regarded as the disclosures of science defined a similar problem of correlation. His 'constant correspondence' represents what happens when the notion of substance is omitted from the context of thought. Between the conditions, we know not what, existing in the minute parts of the primary qualities of things themselves, and the secondary qualities within us (whatever this expression may finally mean), there obtains a constant correspondence. This doctrine interprets in its way the irresistible conviction of common sense. Cartesian metaphysics explicitly complicates the question. If we are to have a science of man, we must take account of three things:

(1) the interactions of (other material) things and the human body, which is a subdivision of physics; (2) the happenings within the human body, and this again is a portion of a universal science of nature; (3) the events arising within spiritual substance and deriving their specific character from this source. Even with this, however, our science of man is far from complete. For the mind seems to have a body; and the human body at least seems to have a mind. It is not then sufficient to study the bodily events and the spiritual events each in their own terms. The unity of man is thus resolved into a system of specific inter-influences (by way of the pineal gland, perhaps) or of specific correlations. If there are interactions, and these occur by way of the gland, then extended explanation involves the argument from the machine to God. If there are no interactions, but only correlations, then again complete explanation is teleological in a somewhat more circuitous manner.

Experience suggests the problem; metaphysics is responsible for the form it takes. And metaphysics—or, by extension, theology—must solve it. From the standpoint of this metaphysics, be it noted, there can be no empirical solution of the problem. Experience, from this standpoint, is just what needs explanation. The Cartesians became fully aware of the precise locus of the difficulty. From the accepted fact that man is a unity of composition whose terms are two antithetical substances, nothing whatever can be inferred concerning either spiritual or physical events or their interrelation. Moreover, the event in spiritual substance—the conscious state or immediate experience—tells us nothing whatever concerning things or events in the other substance. And finally, our (physical) knowledge of bodily occurrences tells us neither that there must be some correlative event in the soul-substance, nor what that event must be. The Cartesians saw this clearly. The problem, they recognized, is defined by specific correlation. The animal spirits, following one channel, coincide with the immediate experience of a toothache; following another nerve-pathway, the specific correlate in conscious experience is a blue color-sensation. Throughout the range of neurological and conscious events, the correlation of the one type of event with the other is specific and theoretically constant. But this cannot be made intelligible from the nature of the animal spirits alone, nor from the character of con-

scious experience alone. The animal spirits certainly cannot be responsible for this specificity of correlation, for within the animals the operations of the spirits have no correlated event whatever. Ordinary human experience, however, suggests almost irresistibly the principle of exact proportionality or of constant specific correlation. Granting that there are two components in the nature of man; granting that these components are as the Cartesians defined them; then experience convinces us that the correlation between the two sets of events is not sporadic and unpredictable, but systematic and theoretically predictable. Were this not the case, a Cartesian would have no problem of the external world. The clear and distinct idea of spiritual substance affords no information concerning matter; the idea of matter does not involve the idea of spirit. Were we limited to a conscious state, the Cartesians implied, and to this alone, we should never suspect that the animal spirits course through the nerve-tubes. Were we somehow limited to a contemplation of physiological events, we should never suspect that sensations and feelings happen within finite existence. That a man, being hungry, should seek food is a fact that contains no mysteries for common sense. In a deeply serious sense, however, for a Cartesian the fact that a man, needing food, should not merely seek food, but should feel hunger, not envy or anger, is deeply mysterious. It is so mysterious that theology alone can provide a clue. A Cartesian, beating his dog, must admire the skillful contrivance of God in that there should be so curious a similarity of action between the beaten dog and the beaten man, while there exists so profound a difference in the natures of the two creatures. How can a body need a soul, since with lowlier bodies souls are dispensable? And how can a soul need a body since a soul is a finite substance and by fact is defined as independent of everything save God? The anti-Cartesians exploited this to the utmost, and a Cartesian's charge of verbalism directed against a scholastic's forms was neatly countered by Peripatetic derision of a wholly superfluous soul.[8]

From these perplexities there was a sole avenue of escape for the Cartesian. The proportionality of body and soul must be ascribed to the competence of God as creator. Moreover, this proportionality must itself be defined as an aim involved in divine

[8] *Cf.* the paper on the Animal Soul, referred to in note 2.

purpose. And finally, the unity of composition, having been resolved into and virtually supplanted by the idea of proportionality, must be further transformed into a law of correlation. This having been accomplished, the notion of substance may be permitted to vanish from the context of science.

Leaving Descartes himself, let us turn to the efforts of his followers. Controversy revealed quickly the artificiality of the pineal-gland theory.[9] It was perplexing for a Cartesian to know how to remain a Cartesian and escape artificiality. Let us summarize fully the factors defining his problem:

(1) A correlation, harmony, fitness or proportionality of body and soul is suggested by experience and demanded by piety.

(2) This correlation or proportionality is not necessarily complete. Obviously it must obtain with respect to sense-experience, its derivatives in memory and imagination, and also with respect to certain voluntary activities expressive of sense-experience.

(3) We have adequate ideas of spiritual and material substance. No relationship of body and soul can be deduced from these ideas alone. The master's interactionism expressed rather than made intelligible commonsense convictions. Moreover, interactionism did not imply in any case causal continuity between body and soul. In these conditions the solution of the problem must lie, not within creation, but within the Creator.

(4) The soul is a substance: a substance is something more than its states, the momentary activities and manifestations which are born of substance and express its nature, but do not exhaust it. Thinking processes of all sorts express the inner traits and native structure of the soul's substantial reality. But there may be portions of the total mental life which spring from the in-

[9] The pineal-gland theory did not involve for Descartes an intrusion of mind into nature or of nature into mind because of his principle that the quantity of motion in the universe is a constant. The soul's influence upon the body being limited to a deflection in the direction of the motions of the animal spirits, the quantity of motion remains unaffected. An irregularity in the physical system may be implied: but appearances are saved, for Descartes, by two considerations. In the first place, interaction did not imply that an existential fact changed its essential substantial nature. And again, the interaction of body and soul, even if implying irregularity from the standpoint of the physical system, was in itself a regularity in a more inclusive system, embracing human souls and nature within the whole of finite existence.

trinsic energies of the soul-substance and for which there are no correlatives or specific proportionalities within the sphere of the body. Soul and body are in harmony: but there may be within the soul powers and the fruits of powers which lie outside of the system of correlations. Similarly there may reside within the mechanism of the body functions not directly expressed in systematic correlations. These elements, residing outside the proportioning of body and soul in a more limited sense, really fall within this harmony in a deeper meaning.

(5) The crux of the body-soul problem is the fact of the *constancy* and *specificity* of the correlation or harmony of events in the soul and events in the body. The world of matter is a realm of causal law; if an event re-occur, then its consequences will re-occur. The system of correlations is equally a realm of law. If an event, say a sensation of red color, occur within the soul, then there occurs, and always occurs when just this sensation is experienced, a certain specific event in nature. The correlation of event in the soul and event in extra-corporeal nature is not regular; but if we bear in mind that the soul is in harmony, not with nature directly, but with the human body, a portion of nature, and only through this with nature as a whole, then we must assert that the correlation of spiritual and physiological events is constant, specific and systematic. To be quite exact, we must define the relationship as obtaining between the mental occurrence and the behavior of the pineal-gland. But in any case, this is what commonsense belief turns out to be when given sound metaphysical grounds.[10] Man, in essence, lies beyond nature; but, notwithstanding, man's relation to nature can be made intelligible. All that is, is Providential—but this is to say that creation is rationally planned.

From this summary we may pass directly to the Cartesians' efforts to meet its difficulties. Out of these efforts psycho-physical parallelism emerged. But the doctrine did not come at once, and we can indicate only a portion of the story.

The situation above described contained two factors warring against one another. Two substances define two types of existence,

[10] These points are illustrated in detail in the papers referred to above, note 2.

which we may call for the sake of brevity psychical or spiritual states and physical or material states. In so far as emphasis falls upon the diversity of substantial natures, then the irreducibility and merely external relatedness of the two kinds of existence occupies the foreground. When interest is empirical, relatedness is of primary importance. The science of man emphasizes the affiliation of events rather than the diversity of them. Moreover, morality demands that the efficacity of the soul be maintained. Knowledge implies that mind can and does deal with things. Most important of all, it is impious to minimize the intimacy of the relation of body and soul; otherwise the Creator would be pictured as a bungler. But even while we emphasize this consideration arising from theology, opponent considerations arise. Immortality is imperilled in the measure in which intimate linkage between the soul and the body is emphasized. Descartes had prudently confined himself to the position that, in showing the soul to be of an imperishable substance, he had done all that metaphysics could well do for religious belief. But when it becomes necessary to harmonize a vast structure of science with theology, more explicit and complete adjustments are necessary. As nature is resolved into mechanism, perhaps the soul will be resolved into a swarm of mental atoms or its substantial reality be supplanted by a set of psychological laws. The disparateness of Cartesian substances has its obvious advantages for supernaturalistic interests. At the same time, we cannot make experience intelligible, and furnish theology with a content to replace revelation, unless a systematic relation obtains between the two substances. Abstractly speaking, the Cartesian substances would be expected to generate, each from within itself and by means of their respective intrinsic resources, phenomena for which all proportionment would be irrelevant. Moreover, if spiritual and material phenomena be not kept rigorously separated, natural sciences would be jeopardized by the undermining of their metaphysical foundations. This situation could be worked out into many details. But enough has been said to indicate the central difficulty: how can the irreducible diversity of substantial natures be retained, with its advantages, while providing the relatedness through which alone man could be included within the sweep of science and the program of social control?

In the main, the efforts of thinkers within the sphere of Cartesian influence were marked by three tendencies. First, the regression of the concept of substance from the foreground of thought and in the end the resolution of the dualism of substances into opponent orders of finite events. Secondly, the correlation of psychical and physical existence is defined in terms of *occasional causation*. Finally, occasional causation is absorbed into theology.

There were many considerations—more than can be recounted within the limits of this paper—that led to the restrictions placed upon the meaning of substance, and to the virtual disuse of the concept. Substance implied intrinsic powers or energies. It possessed functions of origination, or active agency. The picturesquely labeled souls of tradition—the vegetative, sensitive and rational—were adjusted to the requirements of the Cartesian dualism. If these various souls were represented in the body at all, they must be interpreted as specialized activities of the bodily mechanism. In so far the term 'soul' becomes inappropriate. Cartesians perceived clearly and stated emphatically that the term 'soul' can mean but one thing, and that is spiritual substance. For Régis, for example, if animals have souls they are unities of composition and like man; if spiritual substance were lacking, animals are not unities of composition, and there is no sense in which they could be said to possess souls. On the other hand, if the functions indicated by such labels, 'vegetative', 'sensitive' and 'rational' souls, deserve the name, then these functions are intrinsic powers or faculties of the spiritual substance. Now the rational soul had proved particularly bothersome, for it possessed capacities or produced effects not directly due to sense-experience and possibly not even dependent upon it. At least for the anti-empiricist this is the case. Within the context of the dualism, the innate idea expresses the revision of this difficulty. Innate ideas are expressions of the inner potencies of the spiritual substance. The range of these original powers, however, is not easily determined. For example, all abstract ideas may be regarded as innate, in the sense that they reflect primarily the character of spiritual substance itself. Experience, from this point of view, may provide occasions for stimulating the soul to an apprehension of its implicit content, but does not account for the coming of these ideas. On the other hand, an

idea, whatever its source, is a spiritual state; for even sense, memory and imagination are functions of the soul-substance. Abstract ideas, even innate ideas, possess in this sense no superiority over the most rudimentary idea from sense. And sense, too, is as much an aboriginal function of soul-substance as is the power of forming abstract ideas. The idea from sense in its own way expresses the native energies of the mind as much as does the abstract idea. The Cartesian substantial soul thus engulfs all experience.

It is not easy, however, to define the functions of the soul. An intrinsic power for producing innate ideas is no more explanatory of the facts than an aboriginal faculty of sensation. The soul must possess, as substance, all the powers necessary for producing everything that idea, experience, mind, consciousness and spirit can signify. With an emphasis such as this, a conflict emerges. The soul, and not the correlation of psychical and physical states, furnishes the clues to experience. On the other hand, the emphasis may fall elsewhere. Inquiry may turn, not upon the intrinsic energies of the spiritual substances as its pivot, but upon the correlation of mind and nature. Then the system of correlation between the psychical and physical orders tends to deflate the notion of substance. If nature is to be understood as a series of events, the mind tends to become just another series .The Cartesians' perplexities are obvious. If the soul, through its native powers, can produce *some* ideas without even the need of occasioning excitement through sense—and there were Cartesians who thought this—then its dependence upon association with a body for other states is prejudicial to its substantial status. If the soul be not a substance, it is not a soul at all—at least in a sense that would facilitate the adjustment of theology and philosophy. And if it be a substance, nothing more natural can be assumed than a capacity for producing ideas independently of the system of correlation between the spiritual and the corporeal. Against this wars the recognition that exceptions to the system of correlations or occasional causation threatened the intelligibility of the system itself. In short, the idea of universal occasional causation led to neglect of the notion of substance; and in the place of the intrinsic powers belonging to spiritual and extended substance reflection emphasizes the idea of God's providence. Agency belongs to the Creator.

This situation may be illustrated in some detail. For the early Cartesian, physical science and common sense unite in pointing to a specific correlation between psychical states and bodily events, at least with respect to sense-experience and its derivatives. On the other hand, innate and abstract ideas in their universality seem to express an essential independence of sense-experience. We may represent the Cartesians' point of view somewhat as follows. Experience may be necessary as occasion for the soul's exercise of its higher faculties and the apprehension of a content it possesses because it is rational and spiritual. But the occasioning function of experience is general, not specific, with respect to such ideas. Ideas from sense, on the contrary, are specifically occasioned. If in my body the animal spirits have never run a certain course, then in my soul there has never been a sensation of blue. But, so long as my body is affected by things, and my soul enjoys sensations and perceptions—it matters little what the things may be and what the sensations are—my soul may respond by discovering within itself the idea of God or the idea of matter. In a general way sense-experience is the occasion for the inner activity which makes explicit the idea of God. But within wide limits one man's sense-experience is as good as another's for this result. The idea of God—or a process of abstract thinking—either has no specific correlate in the course of the animal spirits, or it has no physiological correlate at all. In either case this activity of soul falls without the system of specific correlation holding in the field of sense, memory and imagination. The man born color-blind can never perceive color, but he may think of God and comprehend that the essence of matter is extension. The spiritual substance thus explains, not merely that ideas, including universals, are spiritual entities, but also that there are universal ideas. On the other hand, this substantial nature enables us to understand why a toothache is a spiritual entity or event, but in no direct sense why toothaches ever occur. This is a new way of denying that everything in the intellect is first in sense.

In such ways the effort to relate concretely the physical and the psychical through the system of occasional causation restricts the rôle of substance, and the latter idea in turn limits the extension of the occasionalistic theory. In a quite similar way this competition

appears with respect to volitional processes. Are all volitions occasioned by or in specific correlation with movements of the animal spirits? There were Cartesians who thought that certain volitions, related to abstract and universal ideas, sprang from the intrinsic powers of the soul-substance, independently of specific bodily occasion. Most volitions are related to sense-experience; with respect to these, the system of occasional causation holds. But other volitions, such as those due to the resolution of the will in a moral crisis, seem to transcend the impulsions of appetite as the universal idea seems to transcend the materials of sense. The productive agency of the soul-substance is thus retained. Louis de la Forge illustrates both points. He implies that there are no bodily processes corresponding to certain (innate and abstract) ideas and that there are volitions having no occasions in bodily processes. These ideas and volitions express the innermost being of the soul-substance. This, then, is what remains of the extraordinarily exceptional position that man, as the sole possessor of a soul, enjoyed in the Cartesian universe of creation.

This position, indeed, is the clue to most of the hesitancies and reservations marking the development of Occasionalism and explains the postponement of an unambiguous psycho-physical parallelism. If the problems bequeathed by the Cartesian dualism are to be solved by the concept of occasional causation, the momentum of its logic will carry reflection beyond doctrines such as that of Louis de la Forge. To preserve the unique position of man implied, so it appeared to the Cartesian, a limitation of occasional causation to human experience, and even to a portion of human experience. The first limitation seems anthropomorphic, and the second arbitrary. If in man alone spiritual states are occasioned by bodily processes, this is understandable only upon the condition that man alone possesses soul-substance. That is to say, the maintenance of the substance concept is necessary in order to preserve man's unique position as alone among creatures enjoying psychical being. With this, however, the very meaning of occasioning cause becomes ambiguous. Does the movement of the pineal gland elicit from the soul-substance an activity expressive of the nature of that substance and not in any exact relationship to the movement? Upon a repetition of this movement are we justified in believing

that *some* activity of the soul-substance will occur, but not necessarily a repetition of the psychical process previously elicited by this movement? If this be the actual relationship signified by occasional causation, then the unity of composition is not a unity at all, and the relation of soul and body is haphazard. What has become of the harmony and proportionality of the components of man which, we have been assured, is expressive of the handiwork of God? The difficulty is sharply defined in the case of volitions. If the soul by its powers resolve an issue and decree a course of action, are we to believe that a certain bodily movement in the pineal gland and no other is occasioned? Or are we to believe only that some movement will occur without certainty as to its appropriateness to this very resolution of the will? In the former case the relation of occasional causation seems indistinguishable from interaction. If an activity of the will, because of its specific character, is responsible for the bodily motion being just what it is, then this seems equivalent to the statement that the soul causes the bodily motion. The more the nature of the soul as substance is emphasized, the more we must emphasize its inner springs and spontaneities: and then causal interactionism seems to be demanded. On the other hand, if we take the second supposition, *i.e.*, that there is no fixed relation between the particular volition and bodily motion, then occasional causation ceases to be causation in any intelligible sense whatever. No orderly connection of soul and body remains, and we cannot speak of the divine laws for the union of soul and body. The predicament was real. With many Cartesians interactionism was regarded as unintelligible. On the other hand, what could be meant by asserting the laws decreed by God for the union of body and soul unless the correlation of movement and conscious state be specific? If divine law govern the union of soul and body, then assuredly movement A is accompanied by psychical state A′ and no other; and the recurrence of A must mean the recurrence of A′ and not B′ or C′.

If occasional causation, as the relationship of the bodily and mental, be freed from traces of meaning deriving from the notion of interacting substances, then clearly the unity of man receives a new definition. Man is not a unity of composition, the components being substances of antithetical properties. The unity of

man is not defined by the notion of substance at all, but by something described as the Creator's laws of the union of soul and body. That is to say, we must give a merely conventional meaning to 'soul' and 'body'. The real fact is the systematic correlation of a psychical state with a movement. To assert that by divine law a certain thought arises 'in the soul' upon the occasion of a certain movement 'in the body' deprives substance of spontaneity and agency. In effect, to be 'in the soul' is nothing more than saying that psychical states or conscious processes, or, more exactly, psychical events, do occur.

In so far as these considerations are pressed, the anthropological dualism dissolves. If the fundamental fact be that, by divine arrangement, movement and psychical event are in constant correspondence, there is no reason for confining this to man. The analogies between animal and human bodily activities suggest that a similar law obtains throughout; in the animal world too the double series is found, and psychical event accompanies bodily movement. Man is no longer unique amid created things.

There is more to be said concerning this situation. There was a danger lurking in the substance notion itself. If we stress the hidden potencies that substance may possess, the Lockean supposition, that matter may be capable of thought, will appear to be both rationally tenable and economical. But in this direction lies materialism, and such a solution was repugnant to the interests of theology. Moreover, the critique of substance, associated with the empirical movement, was destroying the idea of substance, especially in its definition as an unknown substratum. In the circumstances, it was natural to resolve man's composite nature into the systematic correspondence of two series of events.

We have seen indications of the close relation between developments in Cartesianism and theological requirements. With the resolution of the dualism of substances into the correlation of two series of events, the situation persisted. In the earlier stages of the movement, difficulties had been surmounted by appeal to the creative competence of God. But arguments based upon divine competence have a slippery way of adjusting themselves to the most diverse positions. Controversy after Descartes abundantly illustrated this fact. After physical science had defined nature as a

realm of law and things as machines, theology made of these achievements a capital argument for the existence of God. In the same manner, after a universal system of occasional causation had been defined, it was employed for the same purpose. When occasional causation, as a system, has become a foundation for theology, the situation changes with respect to the limitations of occasional causation. There is no longer any reason for admitting exceptions to the specific correspondence between psychical and bodily processes. Physical science had obviated the need of miracles in order to provide evidence for God. In the same way, if the system of occasional causation be grounded upon theology, exceptions to the system would express impiety rather than piety. It is not exception, appeal to obscure potencies of the soul, volitions that have no bodily correlates, which express the craftsmanship and providence of God. Piety forces us to acknowledge that God *could* have proportioned the psychical and physical so perfectly that there should be bodily occasions and correlates for every mental event. Mechanism is not in conflict with the notion of final causation; on the contrary, mechanism is the vehicle by means of which divine design is realized. The universality of the correlation of bodily and mental events is then the evidence of a providential perfection of harmony between the spiritual life and mechanism. The unity of creation is found in the universal network of law; the unity of man is found in the special laws governing the relation of psychical state and bodily occurrence. There is, to be sure, a residual difficulty in this, that only *some* bodily movements are accompanied by spiritual events. This conclusion cannot be avoided after mind, spirit and soul come to mean consciousness, and a substantial substratum is removed from beneath consciousness. This difficulty is all the more perplexing because the spiritual has lost efficacy. Nevertheless, the thought must prevail that in this limitation the wise economy of the Creator is expressed. The vegetative soul, in short, is reduced to bodily mechanism without psychical accompaniment and for reasons of economy. The instabilities of this position need not detain us. To preserve the essential disparity of the psychical and the physical, the conception of occasional causation is employed. But the conception itself needs explanation. The irreducibility of the two series does not

in itself provide an explanation of their systematic correlation. Neither in the sensation of blue, let us say, nor in the neural processes that form the occasion for the sensation, do we find ground for the fact that this sensation and this process are specifically in fixed correlation. In Cartesian circles the question is generalized. No connection whatever is intelligible in terms of the events said to be connected. We say (to use an illustration favored by Cartesians) that the movement of the billiard ball A causes the ball B to move exactly as it does move. This, however, is mere verbal statement. What is given to observation is A's ceasing-to-move and B's beginning-to-move. This is all that causal connection can mean in terms of A and B and their motions. Thus the mystery concerning the concurrence of a certain sensation and a certain bodily motion is no greater than the mystery of this other 'correlation'—that physical event A is followed by physical event B, and not by X or Y or Z. In this manner the perplexity is generalized; all causes are occasions; the hidden potencies of material and spiritual substances are banished and replaced by the problem of God's relation to finite existence, of reality to its twofold appearance.

These are, in part at least, the conditions within which psychophysical parallelism was formulated. This essay began with a statement to the effect that both interaction and parallelism were peculiarly modern doctrines. It would be more accurate to say, after reflecting upon the preceding sketch, that these doctrines are characteristic products of the inter-play of ideas in the seventeenth and eighteenth centuries. Psychology, as it has been generally understood, emerged as a by-product of the historical situation partially outlined above. Assuredly neither the hypothesis of interaction nor that of parallelism was generated within the context of psychological inquiry or because of the peculiar needs of such inquiry. Metaphysics arose to justify a growing physical science, to defend the validity of its implicit claims, and to provide a systematic foundation. As an incident in this program, it appeared that what was left out of physics might be the province of psychology. Interaction and parallelism express the difficulty of determining just what physics does omit—and how what it leaves out is related to what it includes. Descartes, we know, was bewildered by his

discovery of what the human soul is. Doubtless he was puzzled by the conditions under which a scientific study of it must be undertaken. The Cartesian bewilderment, one suspects, has been strikingly persistent throughout the history of modern psychology. When psycho-physical parallelism is defined as merely a working hypothesis for psychology, and all responsibility for the solution of the problem of mind and body is disavowed, resignation seems to replace the Cartesian bewilderment.

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PHILOSOPHY OF HISTORY AND THE PARTICULARITY OF VALUES

THE term 'History' in this discussion is meant to refer not to records and narratives but to the facts about which such records and narratives are made. Consideration is limited to human history. Human history is a complex of individual experiences with temporal relations, simultaneous and successive. The characteristic of the historical is the particularity of its elements. Thus, though birth is a frequent event, each birth is from specific parents at a specific time and place. However alike two events may be in history, they are different at least in their spatio-temporal relations. Some of these events are due to the activities of particular persons. Others are not known to be due to any human activity but are ascribed to the non-human world of physical nature. It may, of course, be asked if there are other factors in history, such as God. Man may not be justified in assuming that there are no spiritual beings higher than himself but less than God. In the present paper it is not absolutely necessary to consider God or angels in history, and I shall make no further reference to them. History is at least this: events due partly to the activities or volitions of individuals and to Nature and its forces.

Except as the object of pure intellectual curiosity, Nature and its forces come into human history only so far as they affect mankind. Human volitions which occasion events are also related to human interests. To understand interests we are forced to consider the values they imply. It is unnecessary to enter into any detailed discussion of the well-known distinction of extrinsic and intrinsic values. The values which in the end really explain interests are intrinsic. I shall use the term intrinsic value both for those 'things' which are approved and sought, and for those which are disapproved and avoided. To simplify the terminology, I shall use the term 'a good', or 'goods', with reference to the former, and 'a bad' or 'bads' with reference to the latter. Thus History is a complex of events due to volitions or Nature and its forces, or both, having relation to goods and bads. Volitions are in the main directed to the experience of goods and their duration, and to the avoidance or cessation of experience of bads.

It will be noticed that I am using these terms 'goods' and 'bads' in the plural. The extent of this plurality is important. Even Absolute Idealists continually use the expressions truth, goodness and beauty, thus implying a plurality, the terms of which they cannot deduce from a single ultimate concept. The pluralism of my use of the term 'goods' goes far beyond such a trinity. For the events of history are not just volitions in relation to Nature and its forces for the true, the good and the beautiful in any general and universal sense. What men aim at is the enjoyment of particular goods or the avoidance of particular bads. What is striven for and enjoyed, what is suffered and striven against, are particular experiences of particular goods and bads. As Aristotle says at the end of Chapter iii, Book i, of his *Nicomachean Ethics:* it is not health in general which is "the subject of the physician's investigation but the health of Man, or rather perhaps of this or that man; for he has to heal individuals". The scientist does not seek truth in general, but particular truths, the chemist truths of one kind, the biologist truths of another. What we approve in ourselves and in others is not goodness in general but actual particular moral qualities and acts. The artist strives to produce particular beautiful objects, and it is particular beautiful objects, whether pictures, or poems, sculptures or melodies, perfumes or the delights of the palate, which men and women enjoy. Whether anything more than mere conceptions is implied by the terms truth, goodness and beauty may be open to discussion, but to me it appears clear that these are not the actual interests in history. History is a pursuit and enjoyment of particular goods and an endeavor to avoid the suffering of particular bads. Real values, as distinct from ideas about values, are particulars.

Let us now consider the conception of the conservation of values and its relation to philosophy of history. The phrase "conservation of values" seems to have been first used by Höffding in his *Philosophy of Religion.* He treats it as an axiom, implying that no value perishes from the world. Presumably Höffding was thinking only of goods. The axiom suggests comparison with the phrase "the conservation of energy". The interpretation given to this latter is that the sum total of energy remains constant—it is neither increased nor diminished; it only changes its form. From the philo-

sophical point of view this axiom may be subjected to criticism; for reality as a whole it is not empirically verifiable nor is it an *a priori* necessity of thought. The same must be said of the alleged axiom of the conservation of values. Though Höffding regarded the axiom as the fundamental principle of religion, he does not suggest what the values are which are thus conserved. Absolute Idealists of the type of Bosanquet assert that the Absolute is perfect. No values can be added to it because all are already there. The Absolute not only is perfect but has always been so, and always will be so. That evidently involves conservation of values. But what values? We are told simply: truth, goodness, beauty. These eternally exist, are eternally conserved in the perfection of the Absolute.

View history in the light of these positions. As Höffding gave no suggestion as to the relation of the empirical values of history to the values supposed conserved, his theory does not help us to understand the significance of historical events. The Absolute Idealist gives no satisfactory account of why we have the idea and experience of effort, of striving, in the historical process by which truths become known, goodness in character and conduct are cultivated, diverse beautiful objects are produced and enjoyed. From the Absolutist standpoint, the efforts of history must represent so much striving or delusion of striving for what already is, under the delusion that it is not. The Absolutist reply to such a contention seems to amount to this: that these strivings (and/or) delusions are part of the infinite perfection. What applies thus to goods must also apply to bads and the whole of the activity to avoid or eradicate them.

Real values, as distinct from ideas about them, I have contended are particulars. There are experiences associated with the body which are sought by most of mankind even at the expense of considerable effort, experiences regarded as of worth, yet which cannot be brought entirely under the denomination of intellectual, moral, aesthetic or religious values. In fact, it would be difficult to exaggerate the amount of human effort in history applied to the attainment of these physical goods or the avoidance of the corresponding bads. There are, for example, the physical comfort of a well-constructed upholstered chair; the sweetness of sugar; the

sex experience (not romantic love, but the physical enjoyment, the pursuit of which undoubtedly accounts for considerable human effort). These are a few of what in my sense of the term would be called goods. It is unnecessary to enumerate the physical discomforts, the particular diseases and pains to the eradication, avoidance or mitigation of which so much human effort is also directed. Many of the events of history have their significance with reference to such physical goods and bads. Consider the character of these experiences. The individual enjoys the comfort of the chair only during the time he is occupying it, let us say at his club, on a particular day from 9 P.M. till 11 P.M., after which he may for a quarter of an hour experience the discomfort of a walk home through wind and sleet. The comfort endured from 9 P.M. to 11 P.M. Here then a particular value began, endured and ended. Similarly it would begin and end for any other person occupying the chair at other times. The sweetness of candy is a value to the child eating it during a period of time. Physical goods in general are values for mankind while they are experienced, and they begin, endure for a time, and end. For the enjoyment of most, if not all, of these goods it is essential that their duration shall not be unduly prolonged. The child learns that too many candies at one time lead to repulsion; and so with many other physical goods. Because such values come, are experienced for a while, then cease, they are none the less real. During the periods in which they are enjoyed they are as real as anything then within experience. For the individual they are real as long as they endure in his experience, and nothing is more real. Even when he is not enjoying them himself he may for various reasons believe that others are enjoying such values. But neither from his own experiences nor from his belief about the experiences of others can he justifiably pass to the idea that in the nature of things such values will remain constant in quantity and quality, or that they will decrease or increase. The scientific consideration of Nature and an empirical survey of history give us no grounds for asserting the continuance of physical and social conditions for all such values always to be conserved. Mankind actively endeavor to eradicate and prevent physical bads. As realities for experience physical goods and bads are on the same level; the enjoyment of the warmth of a good

fire is no more real than the suffering of toothache. If human efforts may cause bads to cease, the possibility of some terrestrial catastrophe causing the goods to cease cannot be denied. I have taken these physical goods and bads into consideration first because, whether we like it or not, we must recognize that their pursuit constitutes much of the content of history. It is sufficient that they are values for men during the time they are enjoyed; they are sought and enjoyed as particulars; here the idea of their conservation in a universal sense does not seem to have much significance for history, although men will strive for as long a continuance as possible of the conditions involved in their enjoyment.

Pass now to other values. Great effort has been made and is being made in history for the attainment of truths and the eradication of errors. Notice I do not say 'Truth', with a capital T, but truths. For the empirical evidence is that in history men have striven for true judgments about this or that. They have not striven for Truth as a universal, for Truth in general, Truth in the abstract. The goods here are truths, true propositions; the bads, errors or false propositions. To say 'I know the Truth' is meaningless; but to say: 'I know the truth about the murder of King Alexander of Yugoslavia' has significance. The truths men have sought have been truths concerning particular historical events or specific mathematical or logical principles, definite uniformities of Nature and so on. The research chemist, for example, seeks particular truths concerning the chemical reactions of elements in specific relations. The knowledge of truths is a value for man when he consciously apprehends them. When I am conscious of this truth or that, then alone is the experience of it for me an intrinsic value. The University Library may no doubt contain thousands of volumes enshrining true propositions, but they can be for me genuine actual values only if I make myself consciously acquainted with them. The books have extrinsic value, but the corresponding specific intrinsic values are experienced only when their contents are consciously apprehended. Now this conscious apprehension may continue for the individual for only a limited duration. Afterwards many propositions are entirely forgotten. Even books, the extrinsic values of which might have mediated a re-enjoyment of

truths, have been utterly destroyed, as for example in the historical event of the destruction of the famous library of Alexandria. General principles and universal propositions, as for example, that the angles of a rectilinear triangle are together equal to two right angles, are not objects of continual conscious apprehension. It may be said that truths are universally valid and eternal. But from the point of view of their experience as values by men that only means that if properly apprehended they are apprehended as truths by whomsoever and whenever they are apprehended. It does not signify that they are always apprehended or that their enjoyment as values necessarily actually lasts more than a certain length of time. Can we then talk in this connection of a conservation of values? I do not see how we can. But here again we may say, as in treating of physical goods: it is sufficient that they are values for men during the time they are enjoyed; they are sought and enjoyed as particulars. The idea of their conservation in a universal sense does not seem to have much significance for history, although men strive and will strive for as long a continuance as possible of the conditions involved in their enjoyment.

Moral values suggest similar considerations. These are qualities of character or acts of conduct as experienced. As found in history these are particulars. Thus it is not good character in general that is sought but that of particular individuals, my own, that of my children, that of those amongst whom I live. So again the moral acts I endeavor to perform are individual acts; the acts of which I approve are actual examples of courage, veracity and so on. The mere idea of courage has no more intrinsic value than the mere idea of cowardice. As a rule moralists maintain belief in the possibility and actuality of moral reform. A man who has the quality of malevolence or impurity may rid himself of this quality. In other words these bads of malevolence and impurity endure for a time actually in this individual but then cease. But does not the same apply to moral goods, such as benevolence and purity? Having experienced these qualities for a time do not some men then lose them and experience other qualities, possibly bad ones? And it may be asked here as with regard to truths, are moral qualities experienced as values for men except consciously? Can we in any justifiable sense say that a man is a good man, except to mean

that generally his conscious attitude and acts are such as to be approved? Individual good and bad acts obviously endure in any case only for a time and then cease. In war an individual may have experienced courage and performed courageous acts; the same man in unemployment after war may, to use a popular phrase, "lose courage". As intrinsic goods benevolence, courage and the like are real as experienced and endure as long as experienced. These experiences may affect the individual so that repetitions of the experience are more easy and probable in the appropriate situations, but these effects are of the nature of extrinsic and not intrinsic values. It may be that moral goods are more enduring than the physical, but it does not seem possible to assert their conservation in the sense that as actual values for men, that is, as experienced, they persist always. Much of the effort in human history is devoted to the cultivation and enjoyment of moral goods and the eradication or prevention of moral bads. But the former are values during the time they are enjoyed; and they are sought and enjoyed as particulars. Once again the idea of their conservation in a universal sense does not seem to have much significance for history, although men strive and will strive for as long a continuance as possible of the conditions involved in the enjoyment of moral goods.

Why do artists paint pictures, musicians compose and play music, architects design artistic buildings? Is it not because aesthetic values for men to be actual must be particulars? We do not experience beauty in general, and so far as activities in history have been concerned with the aesthetic they have been directed to the production and enjoyment of particular objects. Again, these objects are experienced as values for men for particular periods of time. The experience of a melody played on a violin may be an aesthetic value, but it begins at a certain point of time and ends at another. The value as experienced by men has a limited duration. The artist in painting a picture may experience the aesthetic good of creative artistic activity; but this ceases for him when the work is finished and he is not thus engaged. The person who looks at the picture obtains for a time the good of aesthetic contemplation of this particular beautiful object. Thus the aesthetic experiences with which men are concerned in history are particulars, the en-

joyment of which is in each instance of limited duration. There is here no conservation in the sense of the persistence of a constant and continuous experience of such. Even actual objects in relation with which men experience these values, for example, sculptures, paintings, and artistic jewelry, are frequently destroyed. Like all the others, these are values for men only while they are experienced; they are produced and enjoyed only as particulars. The idea of a conservation in a general or universal sense does not seem to have much significance for history, although men strive and will strive for as long continuance as possible of the conditions involved in their enjoyment.

We must, I believe, acknowledge another class of values, the religious. These again are particular experiences which begin, endure and end. The goods of religion are enjoyed as far as we can say, even by the adepts of the religious life, only intermittently. Perhaps these experiences have the best chance of persistence in that they do not necessarily depend on any external physical means. The religious man may urge that there can be no insuperable obstacle to communion with God. That does not necessarily depend on any of the changing conditions of historical earthly life.

In history the activities of individuals, usually in coöperation, are directed to the attainment of these goods or the avoidance of these bads. Often many are enslaved to tasks for the production of the means by which such goods shall be experienced by a few. Ideas are given a prominence, such for example as 'the church', 'the nation', and their content in terms of goods for experiencing individuals obscured, or lost sight of. But 'the church' has its significance ultimately especially in the religious experiences of its members. 'The Nation' has its significance in the 'good lives', that is, the experiences of goods, of its subjects. The goods though particular experiences are not necessarily, or in fact generally, isolated or separate one from another. Rather the history of the individual person involves a coördination of goods into one or more systems, constituting types of living and possessing continuity. The lives of individuals are related with reference to wider wholes of such goods, so that one may talk of a culture or a civilization. However, the significance of a culture or a civilization consists ultimately in the goods experienced by individuals. The

position here maintained implies that the significance of historical events is to be sought in part in its own process, that is, in the actual times in which the goods are experienced. It is evident, however, that the efforts of individuals, separately or in coöperation, are for part of the time directed to the attainment of goods to be experienced at a future time perhaps more or less remote. But the significance of even such aims is to be found ultimately in the individual experiences of goods the character of which has been enumerated above. If they are not directed to such good, I fail to see what they are aiming at. To say for example that the course of history is directed to a "divine end to which the whole creation moves" does not help us, unless some account of the character of that end can be given. As I understand it, philosophy of history has to be developed with due consideration of the particularity of values such as I have briefly indicated.

The human mind is represented as seeking for unity. It has been said, for example, that philosophy seeks for intellectual unity. But we certainly have not yet arrived at a complete intellectual unity of truths. It might possibly be said that the physical world is a unity, but even that may be open to discussion. Can we say that we have moral unity, a unity of moral values? Can it be said even of the individual consciousness that it experiences itself as a moral unity? Surely it cannot be said of the social groups of history, either within themselves or in relation with one another. How are we even to conceive of a unity of different aesthetic values? And what kind of a unity would it be which included physical values, truths, moral goods, aesthetic values and the values of religious experience? History is a complex, a simultaneity and a succession of efforts for and experiences of goods; of experiences of bads and efforts to eradicate and prevent them. This complex of events, with its wars and diplomacy, its lawcourts' episodes, its ecclesiastical utterances, its dances and its visits to museums, its intellectual research and its boxing bouts and the myriad other contents of conscious experience—is, as far as I can see, not yet unified in any significant way. Even unities which are achieved are partial and not infrequently are broken up again. What are we to say of it all? Shall we utter the mystic trilogy: truth, goodness, beauty; and worship them as universal, transcending all these experiences

of temporal life? Kant's suggestion that there is nothing unconditionally good but the good will is not likely to be regarded as giving help. The particular experiences of values may cease, each at its own time; but that they cease does not mean that they are not real values while they are enjoyed. But it may be that the course of historical effort may tend to increase the capacity, to widen the comprehensiveness of the mind, and lead more and more to the possibility of experiencing unities. The final goal might be conceived as not merely free of all bads but as a complete unity of goods. But who can give any indication of the nature of such a unity? There are, nevertheless, continuities and forms of coordination in the historical process which I have not considered in this paper. They are of fundamental importance for philosophy of history, but I reserve them for treatment on some future occasion.

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DISCUSSION

A NOTE ON MORALITIES IN THE PHILOSOPHY OF SANTAYANA

THE notion of morality in the writings of Santayana has passed through an interesting dialectical development. Between the time of the composition of *The Life of Reason* and the *Realms of Being* it is evident that a change has taken place. One can only conjecture as to the cause of this change; whether it can be ascribed to the dialectic of Santayana's own mind or whether it was wrought by the war. "This war will kill the belief in progress",[1] he wrote while it was still going on; and, prophetic as this may have proved to be, it may also have been a reflection of the effect of the war on himself. For he had turned from *The Phases of Human Progress* (the sub-title of *The Life of Reason*) to the detachments of *The Realms of Being*. The tendency is entirely in the direction of transcending the urgent care for human affairs. Santayana is of course himself fully aware of this alteration, and acknowledged it in the preface to the new edition of *The Life of Reason* (1922). Contrasting his earlier and later views, he wrote, "I now dwell by preference on other perspectives [than those of *The Life of Reason*], in which the same objects appear with their relative bulks reversed, and inversely hiding one another; what lay before in the background—nature—has come forward, and the life of reason, which then held the centre of the stage, has receded."

The preoccupation with human affairs in the earlier work was so predominant that its effect was to render the realism of this period hesitating and indeterminate, a tendency which later gave way to the unequivocal affirmation of the independence of matter. *Reason in Common Sense* gives a genetic interpretation of knowledge such that Santayana sometimes appears to hold the view that objects of perception are ideal objects generated by the mind, instead of the later critical realistic view that perception gives the signs of material existences. This inconclusiveness in the conception of the object pervades the crucial chapter on "The Discovery of Natural Objects". "Natural objects" are not there shown definitely to be material and diverse from essence. "A reality", he says, "is a *term of discourse* based on a psychic complex of memories, associations, and expectations, but *constituted in its ideal independence by the assertive energy of thought*."[2] A natural object is also referred to as "an ideal term" and as an "ideal representative" of a group of sensational appearances.[3] The discussion seems to indicate that the natural world is a structure raised

[1] *Soliloquies in England and other Soliloquies* 207.
[2] *Reason in Common Sense* 82. Italics mine.
[3] *Ibid.*

by induction from repeated perceptual and mental experiences. But in the later writing this preoccupation with the genesis of knowledge has disappeared, with the result that there is no indecisiveness as to the status of the natural world. Santayana had finally achieved that detachment which makes realism palatable, and he no longer found it necessary to interpret the world in terms of human effort. The shift in his epistemological position is thus correlative with the development of his ethical views, and indeed the two are mutually influential in their determination. In the beginning it was the life of reason which claimed the devotion of Santayana, while latterly his detached, "post-rational" outlook has closed in upon an ambivalent faith in a stoical ideal and in an unattainable "spiritual life" as the resource for human beings all sorrow-laden and cosmically disillusioned.

In the dialectic of ethical philosophy the life of reason is not the moment of ethical youth nor of old age, but of ethical maturity. At the one extreme is the primitive, savage code of brutality and magic, while at the other is the asceticism of advanced religions or the rejection of pleasure in ethical decadence. The life of reason stands between these two with its acceptance and enjoyment of nature and its determination to modify that nature in the interests of man. The life of reason is the vigorous re-formation of nature by sophisticated men relatively free both from the resort to magic prompted by a youthful faith in easy solutions made possible by an unsuspecting ignorance of nature, and from the resignation of a decadent people which has tried everything and found the outcome to be satiety or frustration or disillusionment. During the maturity of ethical development the energies are still exuberant and the prospect of joy in variegated forms is capable of arousing whole-hearted interest and effort. The life of reason is eminently hopeful: it is the melioration of nature by agencies originating in that very nature toward the realization of a more ideal conformation of objects and events than is found in nature in its natural state. Essentially the life of reason is epitomized by the principle of the technological machine: one part of nature is exerted upon another part in order to reduce to a minimum the inclemencies and tediums of nature, in order to ease the physical life of man and to fill the life of the mind with engrossing occupation.

Santayana's life of reason is in many ways the modern expression of Aristotle's good life through studious observance of the mean course between the too-muchness of lack and excess. This way of life can be likened to the circle in which the center—the natural man with his equipment and capacities—generates radials—the many and varied interests which are the expression of this complete nature—which terminate on the circumference—the realization of the ideals springing from these interests. This circle symbolizes the harmonious fulfilment of man. On the social side the life of reason issues in the state, in

the economic structure, in friendship; on the intellectual side in science and philosophy; on the side of cosmic awareness in religion; and on the side of the immediate, but sophisticated, life of the senses in art. The Aristotelianism of his view is implicit throughout and only occasionally rises to the surface as when he says, "In the history of Jewish and Christian ethics the pendulum has swung between irrational extremes, without ever stopping at that point of equilibrium at which alone rest is possible."[4] And as the form of the life of reason as the articulation of nature in man made consonant is represented by the circle, so the irrational life in its magical and brutalized forms is symbolized by the eccentric, inasmuch as relations among the interests of man are mutually distorted. In the ethical maturity of the individual or of the race the life of reason predominates and flexibility of interest and achievement in all directions is the condition for happiness.

But happiness is after all relative to the state of consciousness, just as a probability-judgment is dependent upon the evidence for that judgment. As the mind grows older and the passions colder through satiety or disappointment there is a change in moral demands and in the conditions for happiness. Instead of seeking after positive goods of the body and mind, the man who has reached the ethical old age wishes to be let alone and to sever the dependence of his hedonic condition upon the attainment of the objects of his desires. In Santayana's later writings this ground-tone of stoicism sounds throughout like a drone bass. As he has himself written, "nature has come forward, and the life of reason . . . has receded" in importance. The resultant stoicism is not as explicit as the ancient variety, or even as in Spinoza, that philosopher so much admired by Santayana. For better or for worse it must be owned that Santayana is rarely explicit in the full, analytic sense. He is too deeply and inexorably subtle, and is too inclusive in his observations to bring them all within coherent, sharply defined conceptual limits. Thus we can say at best that Santayana is stoical *in spirit*, and has passed beyond the doctrine of the mean, the fundamental principle of the life of reason, when he says, "Religion of the sober, practical sort, Roman piety, is emphatically reverence for the nature of things, for the ways of substance. Piety is on the side of belief in substance: the existence of substance is the basis of piety."[5] The end of the moral life is to make oneself over in nature's image, to act under the reign of substance unhampered by the hedonic scruples of consciousness. The ideal existence of the stoic can in a sense be said to be that of inanimate nature. Inanimate beings are perfectly subservient to nature, untroubled by fear or desire, and they are a nature personified without the psychological interferences that impede the fulfilment of nature in its animate personifications. The closest approximation by human beings to a perfect oneness with nature is to act

[4] *Reason in Religion* 80. [5] *The Unknowable* 20, 21.

as though unconscious while yet retaining consciousness. The stoic ideal is a passivity transcending the intense activity requisite for the attainment of this passive attitude towards the sequences of an unconscious nature. One may get the feeling of what it is to be one with nature in the stoical fashion if one imagines how it feels to surrender one's body to the impetus of a high wind. It is to be carried along by nature, not psychologically and impulsively, which is at the opposite extreme from stoicism, but by nature in its inanimate aspect. "In confessing that I have merely touched the hem of nature's garment", writes Santayana, "I feel that virtue from her has passed into me, and made me whole."[6] What he is now interested in is no longer the perfection of man in society, but the *imitatio naturae* on the part of the individual.

Side by side with stoicism Santayana has put forward a second "post-rational" ethic in his ideal of "the spiritual life". In his most recent essay he has identified the supreme object of human loyalty as the "Omnificent", the all-doer which is the source of all cosmic activity, "by my definition the doer of everything that is done".[7] Life is an education in the ways of omnificence. The devotion to omnificence is, however, no longer so discriminating as the stoic consecration to nature. The light of the mind is to play upon no essence with especial intensity because the objects of desire have no eminence of preferability over the objects of any other psychological process. There must not be that special effort to bring one's own nature in perfect accord with the regularities of a mother nature without deflection by impulse which is the goal of the stoic discipline. Gone, too, are the preferences implicit in the life of reason. The highest expression of man is the spiritual life which transcends both, for its first law is to enjoy the manifestations of substance as spectacle, be the attendant circumstances whatever they may. Above my lintel shall I write: "Free contemplation no matter what." Neither those essences which are favored by a stolid nature nor those elevated by the moral traditions of mankind are to be preferred. The life of the spirit is sheer unconditional contemplation of essence, "the self-annihilating contemplation of all Being", self-annihilating because all preferences relating to the self, even those conducive to preservation, are absolutely set aside and enjoyment of essences is uniformly attended to.

But the spiritual life does not actually supplant the rational and stoical ideals in the later philosophy of Santayana. On occasion he falls into the idiom of the life of reason, and more often the drone bass of stoicism is heard. But it is the spiritual life that Santayana would have us live by, so far as it is possible to man. The perfectly free spirit can never be realized by man because conservation of the body re-

[6] *Realm of Essence* xix.
[7] "Ultimate Religion", in *Septimana Spinozana* (1933) 108.

quires partiality for those essences which appear in the preservation of life. The promptings of pain and the demands of the nutritive soul must be heeded. Beyond these exigencies, however, it may be possible to approximate to the spiritual life. The ideals of the life of reason lose their force as ideals and instead are contemplated as items in the spectacle of civilization no more or less interesting or enjoyable regardless of their importance in the human scheme. The keynote of the spiritual life is "disintoxication" from all human values. Stoicism is as far from the spiritual life as Santayana has shown Platonism to be, for the stoic has not surrendered all preference. Natural activity free from impulse and its consequences in pleasure and pain is the aim of the Wise Man. Thus the stoic is not disintoxicated from love of a life affectively neutral, the life from which fear and desire and pain are absent.

If we should judge from the following statement in *The Realm of Essence*, Santayana would seem finally to adopt neither stoicism nor the spiritual life. It is not for him "to go into the wilderness and contemplate pure Being. . . . As for me, I frankly cleave to the Greeks and not to the Indians, and I aspire to be a rational animal rather than a pure spirit" (65). And yet we may wonder whether he has not left the life of reason behind, giving his last allegiance to a stoicism verging upon the spiritual life. We may ask whether his development as a moralist has not run its full course, beginning with a rounded hedonism in the life of reason and coming to rest in the detached old age of morality in a stoical devotion to the unpsychological ways of nature.

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MR. LEWIS' THEORY OF MEANING

IF it were any longer safe in philosophy to begin with a self-evident principle, no more plausible one would be found than the dictum that the experiences of meaning something and of knowing something are self-contained. An event may acquire new significance, and thus mean something different to me from what it meant formerly. But it meant what it did mean, just as it now means what it does mean. Likewise, I may now know more about a thing than I once did, but the knowledge is not the same knowledge in the two cases.

Another almost self-evident statement that might be made about meaning and knowing is that the content of each is something more than what are termed "sense-data". What is meant or known in regard to an event which happened yesterday is more than the sensuous content by which I conceive the event.

The difficulty of explaining how objects known and meant in a sense transcend the sensuous content of the experiences in which knowing

and meaning occur has led Mr. Lewis,[1] together with Mr. Dewey, to favor a theory which divides the knowing-process into two "moments", —in Mr. Lewis' phrases, the moment of entertainment and the moment of verification. This division leads to a very paradoxical conclusion. Dewey holds that an object becomes a known object when an idea is verified by immediately experienced sense-data; thus a known object is known by an experience that is not known. If I understand Mr. Lewis' carefully guarded words correctly, he would accept this account of knowing, but he would reject its application to an account of meaning. To be meant, an object need be verifiable only in a Pickwickian sense which allows that it may or can never be verified. Meaning appears in his account to be a self-contained experience while it yet contains an element of transcendence of present data, expressed in the adjective "verifiable".

Accepting as true the statements that meaning is a self-contained experience and that it contains some sort of transcendence, I wish to question whether Mr. Lewis' theory is correct. His analysis of the meaning-experience seeks to explain the element of transcendence by taking it to refer to the relation between present data and a "projected verifying experience". If we are unable to actualize such an experience, it "can be envisaged *in analogy with* operations which can actually be carried out" (139). Such an analysis harmonizes an account of meaning with the pragmatic account of knowing, but "knowing requires, in addition to meaningfulness, some ground of the assurance of truth" (139).

It is hardly to be denied that some meanings are accompanied by an anticipatory element. When I think of the return of a friend from a far country, the meaning of my thought seems to include the imagination of what I should perceive when I met him at the boat or train. 'The return of my friend' would seem to have no denotative meaning unless I could imagine such an event. But is this "projected verifying experience" the differentia of meaning, or is it merely part of the subject-matter of a particular meaning? That the latter is the true account will, I think, be clear when other cases of meaning are considered.

The commonest use of the verb 'to mean' is its application to language. In a footnote (131) Mr. Lewis restricts his discussion to denotative, empirical meaning. Now when two men approach me, and the one says, 'I want you to meet M. Pierre Renard', the proper name denotes the individual to whom I am being introduced, and the situation is obviously empirical. But I fail to find any projected verifying experience which helps to constitute the meaning of the proper name. I find the same true of the meaning of *words* used to denote any thing or event. Any word may be used to denote any thing or event. The relation

[1] "Experience and Meaning", this *Review* XLIII (1934) 125-146.

is arbitrary. The experience in which the reference is made is self-contained; the name and the x denoted are related in one and the same experience; there is no question of possibly verifying the application of the name to the thing or event so far as meaning is concerned, however important such verification might be to the matter of ascertaining truth or falsity.

Perhaps the denotative meaning of words does not come under Mr. Lewis' theory, but only the denotative meaning of concepts. Let us inquire whether every concept in its denotative meaning contains a projected verifying experience. A celestial city, conceived by a wealth of sensuous imagery, or a civilization, conceived to be now existent on an invisible planet, are meaningful without any suggestion of possible verification. Such concepts are, of course, not included among the meanings discussed by Mr. Lewis. He would probably grant that there are poetically meant objects whose meaning does not imply a projected verifying experience. I mention them only because I believe that from the standpoint of denotative meaning (not from the standpoint of knowledge) they cannot clearly be distinguished from concepts of objects of natural science. Meanings, of both imaginary and 'real' objects, are denotative by virtue of the reference of sensuous content to an object, and they are empirical by virtue of the sensuous character of that content. Actual or possible existence may, of course, be meant, but the whole question of the existence or non-existence of an object, together with its counterpart verifiability, is irrelevant for determining the character of denotative meaning.

That Mr. Lewis imports the notion of existence into his theory appears from his defense at the close of his address of the meaningfulness of certain concepts. One of these, the concept of an external world, may be formulated in a way that "at least poses an intelligible question about the nature of reality", *viz.*, "If all minds should disappear from the universe, the stars would still go on in their courses" (143). "In any case, the fact that it [the hypothesis just mentioned] is unverifiable has no bearing upon its meaningfulness. Whether this hypothesis is true, is a genuine question about the nature of reality" (144). To have empirical meaning, it appears, a concept must include a projected verifying experience which suggests a genuine question about the nature of reality. But how can we be sure that a genuine question is suggested? A pragmatist would not accept the Kantian view that we have *a priori* knowledge of the boundaries of phenomenal experience or the view that would determine the limits of the existent by what is consistent with our present knowledge. Concepts such as those of an aeroplane or a submarine may waver for years between the poetical and the existentially possible. To say that the empirical meaningfulness of such a concept depends upon our ability to imagine the steps by which its

content could be perceptually verified is arbitrary and artificial. If this were true, a scientist would constantly have to act in the dual capacity of scientist and poet.

In considering the nature of meaning it is of first importance to understand that the nature of meaning and the possible or actual verification of meanings are two very distinct matters. The question about verification is a question asked about meanings that already have the status of meanings. Since meanings are thus self-contained, their characteristics should appear on analysis; they should be descriptive rather than speculative. The problem of what they are is not epistemological; it is not concerned with the relation of an object within the experience of meaning to an object outside that experience. The question whether a certain meaning is valid or invalid is improperly stated. There is no question as to the validity or invalidity of a meaning so far as its intrinsic nature is concerned; the question arises only when a meaning is regarded as a candidate for truth in a judgment which incorporates it. The character of a candidate for public office is not determined by what he might do if he were possibly elected, nor is the meaning of a concept determined by the ways in which it might be applied to objects if it could be applied.

The dilemma which Mr. Lewis set himself to solve results from the fact that we mean objects that we are not perceiving in the present, but that we have only present immediate experience by which to mean them. The solution which he defends is an alternative to the theories which hold that the object meant has existence independently of experience, or which hold that the object meant and the meaning experience are one and the same when meaning is attributed. It is clear, however, that the transcendent existence of a wall behind my back which, by hypothesis, can never directly be experienced would not explain how I can now mean that wall. The transcendent wall might disappear or be destroyed without any change in my present concept. Such a transcendent wall, one that lies outside direct experience entirely, may have meaning in imagination or in metaphysics, but it is not what I mean when I think of the wall behind my back. *That* wall is conceived in terms of sensuous attributes. With all this Mr. Lewis would probably agree. But if meaning and knowing are analogous in that meaning, like knowing, does not end in the experience in which it begins (*cf.* 134), and so, like knowing, is a temporal process, a second experience lying outside of the "moment of entertainment" is just as impotent to explain a present meaning as a Lockean substance. Both a transcendent substance and a second verifying experience are equally external, and neither is helpful in solving the dilemma.

It is not clear in Mr. Lewis' address, however, whether the "second moment" makes denotative meaning possible because such meanings

might lead to attempts to verify (in which case the foregoing objection is apposite) or whether the projected verifying experience is present in the moment of entertainment as an imagined perception. In the latter case the question how "memories, visual and tactual images, anticipations" (134) of the wall behind my back can refer to an object outside my present experience is answered by saying that they can do so because they refer to imagined perceptions of the object. One difficulty of this hypothesis is that of distinguishing between the whole or a part of the "present" data and the imagined perceptions, so far as their sensuous content is concerned. The wall behind my back which I may imagine myself perceiving obtains all of its characteristics from my memory of it. Instead of a difference of content, the difference is rather one of functional reference. The same sensuous content is capable of functioning in recollection and in the affirmation of existence. Without functioning in some way, it would have no meaning. (Of course, when it is called "sensuous content" or "sense-data" it is functioning in a very elaborate meaning.) Another difficulty of the hypothesis is that it fails to show how one escapes from the dilemma caused by a "present" experience referring to an object outside itself. For "imagined perceptions" are present experiences no less than memories. Mr. Lewis' theory leaves the problem of objective reference unsolved, but complicates it by postulating a duplex experience.

Objective reference is so fundamental a characteristic of all thought that it would seem to be an ultimate fact rather than a problem. It appears to be a problem in the case of denotative meanings, I think, because of a false theory of "present" data. Within a single experience there is an inner transcendence of immediate sensuous content when this content is affirmed as present, as well as when it is affirmed as past or future. Such imputation occurs in perception as well as in memory. Even the perception that is held to verify an hypothesis assumes a time and place that are not identical with the time and place of the act of perceiving. I cannot here dwell on the spacio-temporal aspect of objective reference. But I will stake my whole argument against Mr. Lewis' position on one point. "One cannot be mistaken about the immediate" (134). On the contrary, one cannot be mistaken about anything else. Immediate data are taken, interpreted, correctly or incorrectly. They are the subject-matter of two kinds of constructions, each of which involves objective reference. On the one hand, they are classified spacio-temporally, as the result of which they are affirmed to be past, present or future, here, there or nowhere. On the other hand, these classifications enter into another fundamental construction by their objective reference to the self or the not-self. From the standpoint of descriptive logical analysis, attribution of immediate data to the past or to a not-self stands on the same basis as

their attribution to the now and to the self. For such analysis, therefore, there is neither a now-predicament nor an ego-centric predicament. These predicaments arise only when one speculates on the metaphysical nature of space, time, self and world. Now meaning, a self-contained experience, requires no more than logical analysis for its description, and its aspect of transcendence is inner and relative to one of its abstract parts, *viz.*, immediate data.

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REVIEWS OF BOOKS

Mind, Self, and Society from the Standpoint of a Social Behaviorist. By GEORGE H. MEAD. Edited, with introduction, by CHARLES W. MORRIS. Chicago, University of Chicago Press, 1934. Pp. xxxviii, 402.

This volume covers the field of Mead's widely known course in Social Psychology at the University of Chicago, and is based upon stenographic reports of his lectures taken down by students in 1927 and 1930, supplemented by excerpts from his manuscript notes and by four short essays, hitherto unpublished. One may hazard a guess that it is not the sort of volume that would have satisfied Mead. It is repetitious, colloquial, occasionally trite to the point of dullness. The reasoning on crucial points (such as the transformation of the gesture into the significant symbol) often lacks the rigor that he would certainly have given it if he had prepared such a book for publication. One occasionally sees him convincing himself in the act of convincing his students, and passing over (doubtless for expository purposes) some rather patent difficulties. Yet when one considers the source of the text, it is remarkable that it contains so few such blemishes. It is so full of brilliant insights and on the whole so consistent and systematic, that one is thankful his students have seen fit to give to the wider philosophical community those ideas which proved so stimulating to them.

Mead's "social behaviorism" consists in an effort to extend the Watsonian method to include the internal as well as the external aspect of conduct, and its social as well as its individual bearing. It takes as its object of study the behavior of the whole social group, of which the individual's behavior is an organic part. Together with this extension of the concept of behavior goes an extension of "experience" to include much more than the muscular response to stimuli which it tends to become for the Watsonians. The stimulus is dethroned, stimulus and response being taken as correlative factors, and conduct itself is seen to possess teleological characteristics, temporal dimensions, and structure. At the same time Mead insists as firmly as Watson on the futility of explanation in terms of consciousness and on the need of getting at the mechanisms involved in conduct. But he rightly insists that an adequate behaviorism must be capable of explaining not only the behavior of the conditioned rat but also the behavior of the Watson who conditions the rat.

As behavior is essentially social in bearing, so mind is to be explained in terms of interaction among individuals. We must not presuppose the existence of mind at the start in order to explain the social process; it is an emergent quality that appears in social behavior (18). That

mind is social in origin and nature is a doctrine older than Mead; but Mead brought it down from the region of romance and tried to discover the mechanism whereby mind comes into being in the social process. This mechanism he found in language, or the vocal gesture, which arouses implicitly in the actor the same response it arouses (or is supposed to arouse) in the individual toward whom it is directed. When this occurs, meaning (as conscious) is present, and communication is possible. Mead's conception of the gesture, not as an expression of a conscious state but as the beginning of a social act which serves as a stimulus to others, and his theory of its transformation into the significant symbol, are matters which no future students of linguistics and social psychology can safely ignore.

Just as mind and conscious meaning are made possible only through the individual's responding (implicitly) to his own vocal gestures in the same way as others explicitly respond, so selfhood arises only when the individual takes up the organization of attitudes which are common to the group. But the self turns out to be a dual entity: on the one hand it consists of such organized social attitudes, the "me", and on the other hand there is an "I" or individual proper, who responds to this organization of social attitudes. The "me" represents the factor of social control; the "I" the factor of social creativity and change; but both are essentially social in origin and significance.

In spite of much that is sound and convincing in Mead's analyses, one lays aside the book with the conviction that he failed in his main enterprise, *viz.*, the explanation of mind and selfhood in terms of social behavior. That we think only to act, and that all action is part of a social process, are the twin postulates on which his whole structure rests; and they will not bear the weight put upon them. For example, he regards meaning as a triadic relation between phases of the social act (the gesture and its sequel) and the two (or more) organisms participating. This surely cannot be maintained. The dark cloud means rain, but it is absurd to say that the cloud is a gesture or that the meaning here is a relation between phases of a social act. More generally, it is sheer dogmatism to deny that consciousness and selfhood are due in part to the interaction of the individual with natural objects and forces. Mead seems at times to feel the inadequacy of "the social", but avoids repudiation by stretching and thinning the concept. Thus "the engineer constructing a bridge talks to nature as we talk to an engineer" (185), and "in music there is perhaps always some sort of a social relation" (280). The fashion of attributing everything to "society" is happily passing, together with the reverence for "the social" which characterized Mead's intellectual generation. We can now recognize the importance of the "social process" (in some sense of the term) without making it the sole factor in the life of mind. It is to be regretted that Mead, who dethroned the Watsonian stimulus

so capably, did not direct a more critical scrutiny upon his own twin deities, Activity and Society.

A word of appreciation must be said of the excellent introduction, sympathetic yet critical, which assists materially in bringing together the various strands of Mead's wide-ranging thought.

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A Study of History. By A. J. TOYNBEE. 3 vols. New York, Oxford University Press, 1934. Pp. xvi, 476; vii, 452; vi, 552.

"The Sciences, in that they are systems of concepts, speak entirely of universals. History speaks of particulars, which betokens a contradiction." In a discussion elsewhere of this science of history, this conclusion of Schopenhauer seemed to me to contain the core of the matter. Professor Toynbee appears to reject it.

It is difficult to review with justice a work still in progress. The three stout volumes with which Professor A. J. Toynbee has here provided us are but three parts of an immense philosophy of history which will, it appears, occupy thirteen volumes. The present volumes are learned, allusive, and discursive. Although few of us can pass an independent judgment upon what Professor Toynbee has to say on Lamaistic Mahayanian Buddhism, one is impressed by a modest solidity of treatment which contrasts favorably with the work with which comparison is most obvious, Spengler's *Downfall of the Western World.* If, however, this present work has none of the charlatan dogmatism of Herr Spengler's writings, it has little of their schematic brilliance.

All that it is prudent to say at this stage is that the road Professor Toynbee has chosen is strewn with the bones of the pioneers. Professor Toynbee is one of those who place in sharp antithesis the methods appropriate to the study of the physical sciences and those appropriate to the study of human affairs. He labors the rather farfetched thesis that, for example, Lord Acton and his contemporaries went wrong in their treatment of history, owing to an undue influence of the methods of physical science upon them. The intermediary field of the biological and psychological disciplines, as providing interpretative hypotheses for that detection of uniformities in history to which Professor Toynbee is committed, he overlooks or rejects. Since the studies that start out from psychological hypotheses are quite the most valuable that are at the present time being done, in the task of interpreting the 'past politics' which is history, it is, at the least, unfortunate that Professor Toynbee appears to be unacquainted with them. It is another case of the tragedy of lack of coördination of investigation in the academic world.

Professor Toynbee is fortunately guiltless of undertaking the inher-

ently impossible task of constructing a demonstrable 'science of history'. His work, while stupendous and as yet of unproven value when compared with jejune (but excellent) little treatises, such as those of Professor F. J. Teggart, at least will not be damned along with that of Spengler and the astrologers of human destiny. Whether Professor Toynbee's basic thesis, that the history of mankind is one of 'great societies', or cultures, which alone form intelligible unities, and not of nations or 'political communities' ('political' remaining undefined), is as important as he thinks it, is more questionable. It does not seem to me to rise to the height of a scientific attitude. One wonders whether a Pole would agree with his delimitation of 'Western society' from 'Orthodox Christian society' as two distinct specimens of the species which is the matter of historical study; or, again, how far the history of the United States is not intelligible as that of a self-sufficient entity, but is intelligible as part of the entity, Western society? Professor Toynbee's stress on the concept of great societies is healthy, but it belongs rather to the province of what one would desire than of what the scientific observer remarks. Similarly, the compromise conclusion to which Professor Toynbee returns in his third volume (that history is not of one humanity or of states, as ultimate entities, but of 'societies', themselves all members of one species, with diverse talents but an underlying unity of spirit) rather betokens the hope of a liberal temperament than the stern demonstration of some Darwin of sociology. However, in the ten volumes yet to come, carried through with all the facilities the Rockefeller Fund can provide, Professor Toynbee may be able to demonstrate the error of this necessarily premature judgment. Especially is this likely if he recalls that history is but the raw material of political science; and that wise men from Aristotle and Machiavelli to Bentham and the contemporary Chicago school have had generalizations to offer, hypotheses to put forward, and uniformities to affirm in this field no less important for his task than brief descriptions of Syrian Jacobite or of Abbassid cultures.

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Studies in the Nature of Facts. University of California Publications in Philosophy, Vol. XIV. Berkeley, University of California Press, 1932. Pp. 232.

Causality. University of California Publications in Philosophy, Vol. XV. Berkeley, University of California Press, 1932. Pp. 232.

What first comes clear from the disheartening confusion of these volumes is the recurring theme of "the inevitable admixture of theory in any possible knowledge of fact", including causation. It appears most insistently in Professor Loewenberg's "The Factitiousness of Qualified Factuality" and "The Elasticity of the Idea of Causality",

which are made to bring fresh support to his Problematic Realism. Professor Pepper sees in this a new version of scepticism (XV 179) and though premising the same admixture, he seeks criteria for preference among facts and theories (184). His position seems midway between that of Professor Loewenberg and that of Professor Adams, who offers "an alternative reading" (XIV 222) of "the inevitable admixture" (204). The difference lies in the extent to which fact is supposed to prompt theory (Adams) rather than theory to prompt fact (Loewenberg).

Such a serial arrangement of the three positions would not, perhaps, be acceptable to Professor Adams, who locates all types of philosophy but his own in another series, determined not by the supposed dynamic relations between fact and theory but by their supposed quantitative proportions in the admixture, and then says (227) that "the view I am outlining is not to be found at any place in such a series of philosophic types". So magisterial a touch is not inexcusable in so masterly a study of "Fact and Perspective", followed in the other volume by an equally impressive critique of Hume and current Positivism, under the title, "The Nature and Validity of the Causal Principle". Each has rightly the last word in its volume.

But in their common cause against Positivism, any differences between the three leaders of the California department seem insignificant. "Positivism is just bad rationalism" (Adams, XV 221; *cf.* the devastating paragraph, XIV 217-8). Its "functional theory of causality is not a theory of causality at all" (Pepper, XV 199). "The attempt of positivists to . . . usurp for the objects of science the appellation of 'facts', is an egregious *petitio* . . . no positivist either does or can discard metaphysical prepossessions" (Loewenberg, XIV 49-50).

Fairly enough, the devil has his advocate in each volume. Professor L. J. Henderson, Harvard biochemist long known to philosophers for his *The Fitness of the Environment* and *The Order of Nature,* offers "An Approximate Definition of Fact" (XIV 179-200), which is a model of positivist analysis, and illustrates Professor Loewenberg's prior thesis as well as if it had been made to order. And Professor Moritz Schlick comes from Vienna, the present headquarters of Positivism, with a clear and persuasive account of "Causality in Everyday Life and in Recent Science", arguing that "in science causality stands for possibility of extrapolation" (XV 119) or prediction (120), and that "it is really a great advantage of scientific language . . . that it treats the causal relation as symmetrical, while in everyday life it is usually thought to be asymmetrical" (116).

But it was perhaps a superfluous gesture of chivalry to bring in these distinguished advocates, for their case is ably represented by the California department's own Professor Dennes, who is sufficiently sceptical of all 'unobservables', 'subsistent essences', 'rational necessities',

'Platonic forms', *'denominationes intrinsecae'*, "atoms, ions, electrons, fields of force" (XIV 116), and for whom (XV 175-6) "There is no synthetic a priori knowledge. The future can be predicted, *i.e.*, guessed at and expected, but it cannot be known. To conceive causation as a sort of necessitation that would verify the future reference of inductions, is to try to lift ourselves by our boot straps. We have noticed instances of functionally correlated processes and have expected more instances of such processes. So far such expecting has been a useful habit. But we know nothing as to how long the habit will continue useful." (Lord Russell's chicken is still with us.)

A mediating view is developed with admirable clarity and good temper by Professor Lenzen of the California Physics Department, employing a distinction between "three levels of metaphysics": (1) theory of objects, "in which one analyzes the characters and relations of [perceptual] aspects" (XIV 154); theory of knowledge, "the study of the ontological status of aspects with respect to consciousness" (153); (3) speculative metaphysics, which "may be extended until it encompasses a theory of the universe as a whole" (153). Positivism, he concludes, "is not a new theory of knowledge, but a pre-epistemological theory" (171). It means merely that science is to be restricted to the first of these three levels. "Classical physics could have been built upon the basis of a theory of objects. But the historical fact is that classical physics was almost inextricably bound up with dualism. The criticism of Mach was directed to the elimination of dualistic epistemology from physics" (176).

Professor Lenzen agrees with the positivists that "the *physical* concept of causality expresses a functional relation between variable physical quantities" (XV 94, my italics), but does not presume that the philosophical problem of causality is thereby solved. Science does not render epistemology or metaphysics otiose, nor can it legislate for them. "The metaphysical significance of science depends upon one's metaphysics, more specifically one's theory of knowledge. . . . The choice of a theory of knowledge must be made on speculative grounds" (XIV 176). He notes also (XV 88) that "the classical physics which assumes causality in the macroscopic order, is presupposed in order to demonstrate the failure of causality in the microscopic realm", and that habit is no explanation of belief in causality, since "habit itself presupposes a particular causal law" (96).

Professor Roelofs, in a paper which has much in common with those of Professors Adams, Pepper, and Loewenberg, argues that factuality is a regulative ideal—which is not far from Professor Pepper's point that facts are not so much *data* as *"datanda"* (*sic!*, XIV 8). Professor Marhenke attempts to break down the distinction between knowledge by acquaintance and knowledge by description, between atomic facts and existence-facts. Professor Mackay provides a prag-

matic deduction of the causal category. Professor Brown, rhapsodizing on the happy emergence of causal determination in the "a-determinate" primary substance, finds indeterminacy atavistic and free-will an *ignis fatuus*.

Perhaps the chief value of these volumes lies not in any direct contribution they make to the solution of the problems with which they profess to deal (for that purpose they could have been better planned), but in incidental *aperçus*, suggestive illustrations and turns of phrase, and expositions (especially Professor Lenzen's) of recent developments in science. Professor Pepper, for instance, cleverly turns the three bears to philosophic account (XIV 3 ff., as P. E. B. Jourdain once did Alice, the Mad Hatter and the March Hare), and finds in certain "middle-sized facts" the "root metaphors" which are "the concrete sources of origin of metaphysical theories" (XV 183). The five that have proved fertile in European thought are, he says, (1) form and matter, (2) similarity, (3) the machine, (4) the organic whole, (5) the patterned event.

It may be remarked that Professor Henderson's essay has now (in the summer of 1935) a topical interest which it lacked when published, or when received by the reviewer more than two years later. Those who are wandering through the mazes of the four volumes of the English translation of Pareto just published, will find in this paper the essence of the matter, distilled in the famous Harvard seminar in which a biochemist expounded the "general sociology" of the Italian engineer who succeeded Walras in the chair of economics at Lausanne. In fact, it is a much more rigorous and close-knit statement of the presuppositions and methods of Pareto than can be found anywhere in the four volumes, or pieced together from them.

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Aristotle: De Anima. Translated into English by J. A. Smith. (*The Works of Aristotle translated into English*, Vol. III.) Oxford, at the Clerendon Press, 1931. Unpaged.

With this version of the *De Anima* the Oxford translation of Aristotle is complete. By a strange accident "the last part of the translation to be published takes its place immediately before the first part to be published, the *Parva Naturalia*, which appeared in 1908", both of them occurring in Volume III. Professor J. A. Smith is to be congratulated, both as translator and as editor, on the fulfilment of this task, so useful to the spread of classical knowledge in the English-speaking world. Whereas in the Middle Ages Aristotle was far better known than Plato, the modern revival of interest in the classics did not give us an acceptable English translation of the whole Aristotle until half a century after we were provided with one of Plato—a whole century after if you consider Thomas Taylor's Plato acceptable.

Professor Smith has rendered the *De Anima* into contemporary intellectual English, using a fairly full translation for the most part, and making Aristotle sound somewhat less staccato than he does in the Greek. No one is likely to improve much on Hicks' translation, but Professor Smith has given us a serviceable version in a form much more convenient to those who have no Greek. He does not say that he is following any particular editor, and in one place I noticed that he substitutes the reading of one manuscript for the ordinary reading without mentioning the fact in a note (427b17). Owing to the difficulty of the *De Anima* there must be in every translation of it some renderings that some readers will consider mistaken. I will mention just one place in which I venture to disagree with Professor Smith about the meaning of the Greek. I cannot believe that Aristotle would say that imagination either is or is held to be "incapable of existing except when we perceive", and I think I have Hammond and Hicks, Professor Smith's predecessors, on my side in holding that he means only that imagination is incapable of existing except when we *have perceived* (*οὔτε ἄνευ αἰσθήσεως*, 428b15). To mention two minor points of style, we may perhaps regret that Professor Smith has made the word "it" refer forward so often; this is a roundabout idiom at best, and it surely becomes ugly in "it is it that itself" in 433b12. Unlike his predecessors he has preferred not to break up the long sentence in 414a4-14; for this literalness he has had to pay a great deal in beauty and clarity.

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George Holmes Howison, Philosopher and Teacher. A selection from his writings with a biographical sketch. By JOHN WRIGHT BUCKHAM and GEORGE MALCOLM STRATTON. Berkeley, University of California Press, 1934. Pp. xvi, 418.

This volume, issued on the centenary of Howison's birth by the Press of the University which he served so illustriously for over three decades, is a worthy tribute to one of America's great thinkers and educators, as well as a valuable addition to our all too scanty literature on American philosophical history. The admirable biography, comprising one hundred and twenty-two pages, was prepared by Professor Stratton, a former pupil and long a colleague of the scholar whom he portrays. For the selection and arrangement of the philosophical papers which are presented—eleven in all—and for the appendices listing Howison's published writings and certain references to Howison in philosophical literature, the responsibility was assumed more particularly by Dr. Buckham, who was for many years closely associated with California's great personal idealist.

Howison's love of truth was a complex affection. It "included a love

of the search for truth, a love of the discovery and of the great things discovered, a love of sharing with others the great things found". In his loyal devotion to what he deemed the truth Howison tended to be a bit pugnacious. "He stood, somewhat defiantly, for blunt personal veracity at any cost— occasionally, at the cost of the feelings of those with him." In general, however, he was characterized by consideration, sympathy, and kindliness. As a teacher he exercised a wide and lasting influence. In conformity with his philosophical creed he met his students as free, rational personalities, "possessed of power to observe, to think, to enjoy beauty, to devote themselves to the great community of persons, of which the greatest of all is God"; "he strove to bring each youth to a living intercourse with a perfect order of existence".

Expressive of the very nature of reason, Howison maintained, and essential to the very being of philosophy, is the distinction between phenomena ("the facts of direct experience") and noumena, higher and profounder realities "which reason requires us to assume as the indispensable and sufficient ground for the occurrence and the ceaseless changing of the former and, above all, for those changeless connections of sequence and position which we observe among them, and which by common consent we designate as the laws of cause and effect, or of the uniformity of Nature". Because positivism attempts to ignore this fundamental distinction, it is self-condemned. What especially require combat, Howison was convinced, are those doctrines which, advancing metaphysical views, formulate these in such a way as to prejudice the reality of free moral personalities. Hence the objects of his most vigorous and sustained attacks were the various impersonal and rigorously monistic philosophies—materialism, Spencerianism, pantheism and absolute idealism. Even the alleged theism which makes God all in all was opposed by him as a traitor to reason and to man; indeed it leaves even its "professed God himself without genuine personality; for his consciousness is void of that recognition and reverence of the personal initiative of other minds which is at once the sign and the test of the true person". According to Howison's personalistic and pluralistic idealism, finite minds, as well as God, are characterized by individuality and independence, and by spontaneous and self-active reason in respect both to theoretical and to practical experience; they are eternal, are uncreated and immortal. To be a mind, however, means to be self-defining, and this involves reference to others, social relationships and consciousness of a divine spirit representing the ideal of every mind and thus embodying perfect intelligence or reason. Thus every mind, however private, is potentially and in its "eternal wholeness" public and universal, even as it manifests itself in its temporal striving for knowledge and moral achievement. The universe is a City of God comprising many members, all of whom "have the equality belonging to their common aim

of fulfilling their one Rational Ideal; and God, the fulfilled Type of every mind, the living Bond of their union, reigns in it, not by the exercise of power, but solely by light; not by authority, but by reason; not by efficient, but by final causation". Minds and the items and order of their experience are exhaustive of reality. "Time and Space, and all that both 'contain', owe their entire existence to the essential correlation and coexistence of minds."

Evolution, of whose limits Howison wrote so penetratingly, has of late appeared in a novel light, and other changes have altered considerably the themes of philosophical investigation and debate. Nevertheless the main problems with which Howison concerned himself continue to be ours, in however modified a form. Howison himself left these without detailed analysis, and his treatment of them, though professedly logical and rationally compelling, seems carried to a considerable degree by a faith in and a concern for the integrity of free, self-determining and eternal persons. His explanations of the sense-experience of finite minds, in both its theoretical and its moral aspects, seem ambiguous and at some points quite unsatisfactory; and his arguments for the existence of other finite minds and of God are unconvincing. Yet the time will not soon come when philosophers may not with profit turn to pages which express with so much vigor the uncompromising demands of man's nature as a rational and a moral being.

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L'esthétique de la grâce. Introduction à l'étude des équilibres de structure. Par RAYMOND BAYER. Tomes I et II. Paris, Félix Alcan, 1933, Pp. viii, 636; 578.

Léonard de Vinci: la grâce. Par RAYMOND BAYER. Paris, Félix Alcan, 1933. Pp. 304.

Grace, according to M. Bayer, far from being simply an aspect of the beautiful, is an independent category. To the exhaustive analysis of the nature of grace, and, in the course of accomplishing this, to the justification of the separateness of grace from the other species of the aesthetic, and, though briefly, to the classification and analysis of the aesthetic categories, *L'esthétique de la grâce* is primarily devoted.

The history of the concept of grace, M. Bayer finds, exhibits a striking agreement among aestheticians, poets, artists, and metaphysicians that grace is beauty in movement, movement marked by ease or facility: however the various theories may diverge in their development, they are at one in considering movement basic to grace. Only by metaphor or analogy is the notion extended to the inanimate, to the static. M. Bayer contests the subordination of grace to beauty and the basing of grace upon movement, claiming that there are move-

ments that should be considered beautiful rather than graceful, and that there is grace in the static.

The aesthetic object is a structure of *aspects* (sounds, colors, movements, etc.), and the aesthetic category to which it belongs depends upon the type of equilibrium in this structure. Each type of equilibrium is a certain relationship between requirements and responses among the aspects of the aesthetic object.

Grace is caprice under law; it is marked by freedom, abandon, risk, fecundity, the unexpected, miracle: "c'est partout un état dans l'objet qu'il faudrait décrire, *état fait de structures de privilège, où les exigences, sans cesse dépassées, sont enveloppées sans cesse par les possibles*" (II 350). Grace is that type of equilibrium in which the requirements are not merely responded to, but are revised, regrouped, and thus surpassed. This defining trait of grace, M. Bayer calls *surcroît* or inexhaustion. *Surcroît* has its laws, under the two major signs of economy and suppleness.

The laws of economy are not laws of specific performance so much as they are conditions and guides for the being of grace. They include continuity in change, vanishing of contents, fragmentation and diminution. Obedience to these laws gives grace its force: "la génération du pouvoir entre les systèmes d'exigences paraît dans les structures par un perpétuel surcroît ostentatoire des moyens, entre le gaspillage qui les manifeste et l'épargne qui les économise" (II 374). Under the régimes of suppleness, appears the efflorescence of grace, action and play upon the surface of the work. Grace is the aesthetics of risk: it lives between two perils; on the one hand, facile submission to the requirements, absence of creation and re-creation; and on the other hand, mere caprice, or unconditioned virtuosity. Saved from these perils, "l'escrime serrée du virtuose avec l'exigence" (II 380), grace emerges, with its suppleness, abandon, surprise, and miracle. "Ce que l'épargne permet, la souplesse le réalise" (II 386).

M. Bayer distinguishes the aesthetic judgment of fact from the aesthetic judgment of value. The categories of the aesthetic are differentiated by objective characters disclosed in the types of the equilibrium of structure, under the aesthetic judgment of fact. Grace is the pure contrary of the sublime. While both categories are quantitative, grace is ruled by régimes of diminution; the sublime is grandeur. While both categories are dynamic, grace is produced in equilibriums of inexhaustibleness and diversity; the sublime is characterized by a certain deficiency of power and by monotony. Beauty is opposed to both of these: it is purely qualitative, not quantitative; it is stable, not dynamic. Beauty is ruled by *équilibres harmoniques*, where the responses in the work exactly meet the requirements. In addition, M. Bayer derives the categories of the comic and the baroque, the baroque as aesthetic type being distinguished from the baroque which seeks but

fails to attain grace; and the mixed categories of the grace of beauty and the graceful comic.

The aesthetic judgment of value, based upon the judgment of fact, and involving choice, appreciation, praise, directs the types toward the qualitative and beauty in general. The judgment of value presupposes a hierarchy and criteria: but the investigation of these matters is not within the scope of M. Bayer's present work.

The work of art is a transformation of the world under types of equilibrium, and is thus a state of our power. In the work, in its rhythms, the artist also attains a fixation of his emotions. These equilibriums are reconstructed in the spectator, and his emotions are rhythmed under the discipline of the equilibriums and rhythms of the object. The spectator is captive, subjected to the work. This submission to the discipline of the object. M. Bayer names pure action, *i.e.*, paradoxically, action undergone, inverted, suspended.

In the frequent vagueness of the concepts used as instruments of analysis, in the tendency to substitute aesthetic insights and intuitions for explanatory concepts, lie the first difficulties, if not defects, of M. Bayer's work as a philosophical treatise. On the other hand, one is fascinated by his familiarity with detail in all the arts, and by the rich multiplicity and genuineness of his insight. Finally, one must pay him the compliment of saying that to criticize briefly would be only to misrepresent.

His *Léonard de Vinci: la grâce* is an examination of the aspects of grace and beauty in Italian art of the fourteenth and fifteenth centuries and particularly in Leonardo. The study centers upon the splendor of grace; the splendor experienced by the subject as he submits to the rhythms of grace. The philosophical background is the neo-Platonic preoccupation with light which finds its aesthetic fruition in Leonardo's treatment of the *clair-obscur*.

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Sokrates. Ein Versuch über den Ursprung der Metaphysik. Von HELMUT KUHN. Berlin, Die Runde, 1934. Pp. 162.

Although the sub-title of this work is justified by the contents of the third section of the last chapter, the great bulk of the book is concerned with a reconstruction and description of the life of Socrates as manifested in his "philosophizing", the essential characteristics of which were, according to the author, three: the break with the traditional criteria of life occasioned by the Socratic question and culminating in the "consciousness of ignorance"; the determination by means of the "logos" of absolute standards which are held strictly apart from the ordinary relative standards; fundamental and all-pervading piety. The Socratic question itself was possible only because

of the presumption that there is an art of life as a whole; this presumption was due to the model of τέχνη that Socrates chose to represent vividly the meaning of his question; and from this presumption naturally proceeded the Socratic paradoxes: virtue is knowledge; virtue is teachable; no one errs willingly. The importance attributed to the influence of the analogy of τέχνη throughout Kuhn's interpretation transforms the term into the "root-metaphor" of the Socratic philosophy in the sense which Professor Stephen Pepper has given that word.

The Socratic confession of ignorance is, Kuhn believes, on the one hand expression of the necessary futility of the Socratic question, the shoal on which Socrates foundered, although in his case this foundering was constantly repeated, was the dynamic force of his career. On the other hand, it is "knowledge of oneself" which consists of two inseparable moments, critical judgment and possession of oneself. This positive phase of the question issues in the conviction that the Good-in-itself is life as a whole, is the *right use* which makes the relative goods good; and the notion of this relationship made it possible for Socrates to assert that all willful action is for the Good even while he was exhorting men to act always for the sake of the Good.

Although formally the Socratic "logos" distinguishes the absolute Good from "the goods" by attributing to the former a unifying force which establishes self-consistency, this "formalism", Kuhn asserts, is not merely an "empty category" but expresses "the formalizing of life itself which thus transcends its disintegrating content and concentrates itself in the unity of its essential meaning". The objection that the fallacy of the Socratic ethics lies in the rationalism which seeks to realize this unity as knowledge Kuhn answers rightly by saying that the Socratic question "erfasst nicht theoretisch das Besonnenleben als eine Möglichkeit neben anderen Möglichkeiten des Mensch-Seins und im Verhältnis zu diesen anderen, sondern sie ist selbst schon die Verwicklichung der einen Möglichkeit".

The distinction between the ultimate τέλος and relative ends makes the Socratic question a question of "the kind of life" one has to choose, and the principle of this choice is the absolute Good. It would, I think, be more direct to say that, as choice is always determined by our knowledge of the good, the basic demand of this ethics is a constant awareness of the difference between relative and absolute. The faith that the Good, made clear by the "logos", will lead one to one's own essential nature enabled Socrates to assume that in recognition of the Good the happy life is chosen, for happiness stands to the various pleasures as the Good to the relative goods, although pleasure only in the fleeting phase of its culmination and abstracted from its essential shifting can serve as a likeness to happiness which is really its opposite. This faith Kuhn takes to be the characteristic mark of Socrates' piety.

The Socratic protreptic which first turns the attention from particular activities and desires to life as an integrated whole and which then sharpens the ability of absolute distinction and induces to choice, finally establishes the bravery which in all circumstances holds to this choice. "Durch die Tapferkeit wird die Weise des sokratischen Fragens zur festgegründeten Haltung im Leben, die in der Begriffsbestimmung der Tapferkeit um ihr Selbstverständnis kämpft." The Good which is the object of living activity is at once the object of the soul, for the soul is the living and essential man, and the state of the soul itself. "Sorge um die Seele" is the ultimate meaning of the Socratic question.

Since Kuhn thinks it incomprehensible that Socrates could in this world live a life based only upon a notion of Justice (which for Socrates was concern for the goodness of the soul) arising from a consciousness of ignorance and manifesting itself in a constant critical examination of himself and his fellow-men, he believes that only by its piety is the fullness of Socrates' life intelligible. In the oracle of Apollo and the *daimonion*, Kuhn says, Socrates found assurance of superhuman guidance which made him a tool of the god and legitimated his activity.

What is the basis for this circumstantial account of Socrates and his philosophy? In his last chapter Kuhn rejects the evidence of Aristophanes and complains that Aristotle and Xenophon are for different reasons practically of little help. To all the methods hitherto used for abstracting the historical Socrates from the Platonic works he presents objections, not novel but in large part cogent. But his own reconstruction is based upon a purely intuitive process, the historical theory of Overbeck which distinguishes *Urgeschichte*, *Gegenwartsgeschichte*, and *Vergangenheitsgeschichte* in a "qualitative", not a chronological, fashion. In European philosophy everything down to Plato—and particularly the Socratic philosophizing—is *Urgeschichte*. For this *Urgeschichte* as *Entstehungsgeschichte* literary sources are of little use because "das Werdende [ist] noch ohne Verhältnis zu den Ausdrucksformen der Zeit und daher literarisch stumm" (140). His method is briefly put in the sentence: "In freier Konstruktion muss sie [*Urgeschichte* in this sense] im Blick auf das Erzeugte den Entstehungsvorgang nachzuzeichnen versuchen" (141). Such a method overlooks the possibility of multiple causes, it makes the dangerous assumption of necessary antecedents and it withdraws itself from criticism, for it appeals not to evidence but to insight. In this special problem Kuhn proceeds to "discover" Socrates by the axiom: What was "becoming" in Socrates was the ontology of Plato which in turn was the foundation of Aristotelian metaphysics and through that of the development of western philosophy. But this axiom is essentially that of Aristotle, whose remarks on Socrates were because of it said to rob him

of his own personality (130). Since Plato's "answer" was ontological, Socrates' question must have been of the same nature, Kuhn proceeds, and he tries (144-157) to show how the Platonic philosophy is an ontological devolopment from the Socratic question. But this whole attempt is a *petitio principii*, for while it is meant to justify the previous chapters of the study, it assumes the description of Socrates outlined in those chapters, a description which, according to Kuhn, was discovered from Plato's own writings to be the necessary antecedent of the Platonic philosophy. The detailed method of "discovering Socrates", then, really is once more an interpretation of Plato's dialogues—as it had to be, for the general "principle" of the method is an empty formula which could never distinguish one historical figure or event from another.

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Proceedings of the Aristotelian Society. 1932-1933. Volume XXXIII. London, Harrison & Sons, 1933. Pp. 354.

This volume comprises a miscellaneous series of essays of very unequal merit and on a considerable variety of topics. I attempt a rough classification.

Three of the papers touch upon problems of aesthetics. The Presidential Address ("Fact and Form", by L. J. Russell) draws a parallel between the procedures of art and those of the sciences. "In pure science and in pure art, we have activities in which man does violence to what he could be said simply to find in nature, and creates new wholes in an expressive medium under the guidance in the one case of intellectual, in the other case of emotional delight. In both cases the activity delights for its own sake, but in both cases it results in something which is an indispensable guide for the exploration of nature." There is a further analogy between the relation of pure to applied science and that of art to ordinary perception. A. H. Hannay ("The Realist Basis of Contemporary Aesthetics") and T. E. Jessop ("The Definition of Beauty") represent opposing points of view—the former arguing against all such "realistic" asumptions as he finds current in contemporary aesthetics, while the latter, on the other hand, defends a realistic view of beauty as an objective property of things.

Three further papers are devoted to the question of the nature and limits of "analysis". Miss L. S. Stebbing ("The Method of Analysis in Metaphysics") appears in a somewhat chastened mood. Although firmly convinced that "the proper method of metaphysics is the method of analysis", she finds herself somewhat disquieted by the discovery that the adoption of this method itself commits one *ab initio* to certain metaphysical conclusions (*e.g.*, "that the ultimate constituents of the

world are simple") which "so far from being certainly justified are not even very plausible". M. Black ("Philosophical Analysis"), on the other hand, is not troubled by these scruples. For him philosophical analysis "is concerned with the structure of sentences rather than with facts, and needs no metaphysical presuppositions to ensure its practicability". E. S. Russell ("The Limitations of Analysis in Biology") traverses familiar ground. "The unity of the organism . . . must be accepted as fundamental . . . the parts appear by differentiation within the whole . . . the biologist's first task is to study the activities of the organism as a whole. . . . We may quite properly analyse . . . and work down . . . to the conditions of the whole-action . . . but we cannot re-compose the whole by direct summation of the parts distinguished by analysis."

Two of the essays deal with the philosophy of language. Of these that of Reginald Jackson ("The Conventional Basis of Meaning") struck me as very profitable. After a highly subtle analysis of the nature of symbolism and of the ideal of a "perfectly symbolic" language, he is led to the very sensible conclusion (1) that language never will be, nor is it desirable that it should be, "merely and perfectly symbolic" and (2) that "the defects of language, considered as a symbolic apparatus, are seriously exaggerated by contemporary philosophers". N. Isaacs ("The Logic of Language") deals with the psychological origins of linguistic ambiguity and offers some indication as to how such ambiguities may be cleared up.

There are four papers on special metaphysical problems. Notable among these is A. C. Ewing's able statement of the case against the "regularity view" of causality ("A Defense of Causality"). He argues that there is some sort of 'intrinsic connexion" between cause and effect, at least analogous to logical connexion". A. A. Bowman ("Spirit-Time") wrestles valiantly with some very genuine difficulties created by the undoubted fact that we have not only a "succession of experiences" but also "an experience of succession". His conclusions will strike many as paradoxical. Not only has the distinction of past, present and future no validity apart from some relation to conscious experience, but a past experience "can without *complete loss* of identity undergo a certain *change of identity*, through an experience that succeeds it in time", and, further, future experiences can effect a similar modification of those of the present. J. W. Scott ("The Independence of the Objective") affirms his confidence that the "nature" which I find simply "given to me; given as infinitely other than me" can only be "other spirit"—reality is an eternal activity of "construction" in which each of us shares; and Sir Mohammed Iqbal ("Is Religion Possible?") expresses his faith that religious experience in its higher (mystical) forms can only be understood as "a response to an objective situation" having "cognitive value for the recipient" and "a capacity

to centralize the forces of the ego and thereby to endow him with a new personality".

Of the two remaining papers that of R. I. Aaron ("Locke's Theory of Universals") is a very able historical study that will be of interest to all students of modern philosophy. R. B. Braithwaite ("The Nature of Believing") offers a "behaviouristic" analysis of the differentia of belief. His thesis (ignoring certain qualifications) is that "I believe *p*" means (1) I entertain *p* and (2) I have a disposition to act as if *p* were true. His statement of the case is ingenious and plausible, but I think not convincing. For one thing his view involves the difficult consequence that I can know only by some sort of inference whether or no I am believing a proposition such as, "The pencil which I am now seeing is yellow". And I believe it could be shown that his definition of believing would include among my beliefs certain propositions which I do not believe and would exclude others that I do. But that is too long a story for this place.

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DESCRIPTIVE NOTICES

The Chinese Renaissance. The Haskell Lectures, 1933. By HU SHIH. Chicago, The University of Chicago Press, 1934. Pp. xii, 110.

Anyone who wishes an illuminating and suggestive interpretation of the main forces that are remolding Chinese culture at the present time will find what he wants in this little book. The author is China's best known living philosopher, and his discussion is marked by breadth and catholicity of understanding as well as by the freshness and vividness made possible by his own participation in several of the movements treated. After an analysis of the distinctive attitudes of Chinese culture and a historical summary of its relations with the western world, Dr. Hu discusses in successive chapters the transformations now under way in the fields of letters, education, religion and morals. The reader's only regret is the narrow compass into which each of these treatments is compressed, rendered necessary by the limitations of time when the lectures were delivered, and by the many subsequent demands upon the author which prevented expansion of the material in its published form.

E. A. BURTT

CORNELL UNIVERSITY

Deutsche Rechtserneuung und Rechtsphilosophie. Von KARL LARENZ. Tübingen, J. C. B. Mohr, 1934. Pp. 44.

This lecture attempts to state the revolution in law and the philosophy of law produced by the success of the Nazi Party in Germany. Negatively the Nazi revolution is to undo the work of the French Revolution. In politics it is to displace liberalism and individualism; in legal philosophy it is to expunge the effects of natural law and of positivism (Hans Kelsen). It develops tendencies already begun in romanticism, in the romanticized logic of Hegel, in the historical school of jurisprudence, and in Gierke's theory of the state's personality. From the Nazi point of view law is in essence the will of the community, manifested ultimately in the will of the *Führer*. For the ideals of freedom and equality it substitutes those of membership in a race and community. It imputes rights not to persons but to their stations in the community, and in criminal law it revives the principle of retaliation as signifying the moral right of the community to hold the individual responsible.

GEORGE H. SABINE

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Philosophy of Society. Papers read at the Ninth Annual Meeting, American Catholic Philosophical Association. Edited by CHARLES S. HART. Philadelphia, The Dolphin Press, 1934. Pp. XII, 204.

The symposium, the results of which are embodied in the present volume, had as its chief aim the ascertainment of "those more fundamental aspects or basic principles of human relations which the various social sciences assume". With such an end in view the contributors investigated problems ranging from the social theory of St. Thomas Aquinas to the philosophic interpretations of capitalism, communism and fascism, and modern value-

theories. In spite of the unity of tone that the various contributions receive from a common acceptance of certain traditional dogmas and from a common appeal to the authority of St. Thomas and the Pope, the papers differ very greatly, not merely in regard to subject-matter and to form, but also, and perhaps even more, in regard to merit. The ablest of the papers, at least in the eyes of the present reviewer, is one entitled "Education in a Philosophy of Society", contributed by Dr. George Johnson, of the Department of Education, The Catholic University of America—a brief but exceptionally able analysis of present educational problems that pleads for a more cultural, a more generalized and a more social-minded education than our present one. This paper by itself makes the present work worthy of a circulation far beyond the borders of the Catholic church. If Dr. Johnson's paper is the ablest of the fourteen contributions, Dr. Leo R. Ward, of the Department of Philosophy of the University of Notre Dame, may well be said to have contributed the most original one. This paper, entitled "Search for a Usable Concept of Value", presents an ingenious and interesting, yet, to my mind at least, quite unconvincing, argument in favor of the view that the problem of defining value is philosophically trivial, and that most of the difficulties of modern axiology would vanish if the concepts of being and perfection were to be substituted for that of value. This paper should be of interest to all who are concerned with general axiology, no matter what views they may hold on the subject. Reference to the twelve remaining papers is, unfortunately, forbidden by lack of space.

SVEN NILSON

HARTFORD, CONNECTICUT

Logical Positivism and Analysis. By L. SUSAN STEBBING. Annual Philosophical Lecture, Henriette Hertz Trust, British Academy, 1933. From the Proceedings of the British Academy, Vol. XIX. Oxford, Oxford University Press, 1934.

Miss Stebbing describes (1) certain respects in which the work of Wittgenstein and the so-called logical positivists is homogeneous with that of other philosophers, particularly G. E. Moore; (2) certain respects in which she finds the procedure of the "logical positivists" to be confused (most of these latter, respects in which their procedure diverges from Moore's).

Under (1) Miss Stebbing might have noted filiations, not only to Moore and Russell, but to many of the great figures in the history of philosophy, beginning with Socrates. Under (2) Miss Stebbing's criticism suffers from the fact that it is by no means clear (as she herself admits) whether the "positivists" (particularly Wittgenstein) hold the views she criticizes. To choose a single example, she supposes (35) that the "positivists" commit themselves to subjectivism and solipsism by identifying "facts' with "my experience of facts", and by failing consequently to distinguish the verification of a proposition from what makes it true. To take such criticism seriously would require us to suppose that terms like "my" and "experience" (26 f.) have no "grammar", either in ordinary discourse or else in the statements of the "positivists"—that is, in one or other of these usages are not words at all. In her own proposals Miss Stebbing employs such notions as those of "knowing hypothetical facts" (32), of "basic facts" (32), of

propositions of which we know the truth but not the meaning—notions which, in their contexts, may be suspected of the sort of confusion she regrets in the writings of the "positivists".

Miss Stebbing's whole interpretation rests on the assumption that the "logical positivists" hold a philosophical theory (4). This assumption needs a good deal of examination and defense, since most of the "logical positivists" not only deny it, but regard as basic the insight that there are no propositions or theories which, as philosophical, are distinguished in kind from scientific statements of, or hypotheses with respect to, facts.

WILLIAM R. DENNES

UNIVERSITY OF CALIFORNIA

The Categories of Charles Peirce. By EUGENE FREEMAN. Chicago, The Open Court Publishing Company, 1934. Pp. vi, 62.

Mr. Freeman collates, and gives an instructive interpretation of, Peirce's fundamental statements on the categories of Firstness, Secondness, and Thirdness—categories "rooted in his symbolic logic, supporting his esthetics and ethics, spreading out in the firm branches of his descriptive logic, and blossoming into the flowers of his metaphysics . . ." (13). He distinguishes Peirce's attempted *a priori* derivation of the categories by and from logic, and his "verification" of them by application to phenomenal experience. He asserts that, by combining these two procedures, Peirce approached a "mathematical empiricism", a possible development of which Freeman outlines in terms of his own scheme of "Categoriology" and "Orientics" as "resting upon a prior science" which he terms "Specifics".

Even Mr. Freeman's excellent interpretation will probably not remove, for many readers, the confusion that seems to vitiate such notions as those (1) that logical form is necessary *a priori* and yet is a special sort of form which excludes some conceivable structures (and hence that the adjective 'mathematical' is critically significant in 'mathematical empiricism'); (2) that a metaphysic can in some sense or in some part be derived from logic; (3) that categories may appropriately be called true or false. The discussion of Tychism and Synechism, like Peirce's own statements, neglects to make out (in answer to Leibniz and Hume) the sense in which any relation save that of self-identity can be understood as a necessary connection. Students of Peirce will hope for an elucidation of the meaning of 'explained' in such passages as "the unity and regularity of the universe is explained by synechism, . . . The diversity and irregularity of the universe is explained by tychism" (46).

WILLIAM R. DENNES

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On the Contingency of Natural Law. By CHESTER TOWNSEND RUDDICK, Philadelphia, 1932. Pp. 330-384.

Mr. Ruddick attempts to distinguish in detail the types of mechanical and statistical law, in order to determine whether "the characteristics of either type of law . . . make it the only sort eligible for a complete description of nature" (358). He concludes that there is no ground for asserting the exclusive propriety of either type of law, and that the issue between them is "not one of fact, dependent upon the state of our knowledge, but of motive

dependent upon the state of our soul" (368). He represents mechanical laws as yielding descriptions that "deal with the particular individual" (360), and as allowing *certain* prediction of the future (364 *et passim*). But unless Mr. Ruddick can find a way to answer the criticisms of Leibniz and Hume of the notion of necessary connection, and of Spinoza of the notions of order and disorder, the prior question of the *meaning* of certainty of prediction will embarrass a reader of his treatise. Unless laws of nature are taken to refer to nothing but human emotions, it would seem that the issues (which Mr. Ruddick convincingly shows are not issues of fact) would not be issues of "motive" either, but rather questions of notation, as would seem to be the choice he cites as illustrative between the Copernican and the Ptolemaic rendering of the correlations of planetary and stellar positions.

WILLIAM R. DENNES

UNIVERSITY OF CALIFORNIA

New Light on Fundamental Problems Including Nature and Function of Art. A Critical and Constructive Study of the Problems of Philosophy from the New Point of View of Henri Bergson. By T. V. SESHAGIRI ROW. Madras, University of Madras, 1932. Pp. xviii, 274.

This book, which is a doctoral thesis, attempts to formulate a philosophy of morals, of religion, and of art on the basis of Bergsonian thought. It begins with a criticism of Absolute idealism, mainly that of A. E. Taylor, in the light of Bergson's concepts of freedom and creative evolution. On this foundation it replaces the ethics of self-realization with one of self-creation in which moral action is treated as artistic expression. This is followed by an attempt to clarify and defend Bergson's conception of God. God is creative activity itself, source of spirit and matter, growing from perfection to perfection. Since creative activity manifests itself in human ideals, God is not aloof from man, and the religion implied is one of Love. Part II of the book is devoted to a theory of aesthetics. Agreeing with Croce that art is rooted in intuition, the author thinks that Croce has neglected the development of the intuition in its reaction to the external world as the artist works with his material. He therefore develops Croce's "expressionist theory" into his own "creative evolution theory" in such a way as to make it agree with the spirit of Bergson's concepts of intuition and free creativity. An analysis of a number of classical paintings illustrates his theory.

E. T. MITCHELL

UNIVERSITY OF TEXAS

Schule der Abstraktion und der Dialektik. Neue Wege begrifflichen Denkens. Von LEO JORDAN. Munich, Ernst Reinhart, 1932. Pp. 160.

This volume undertakes to liberate the terms *abstract* and *concrete* from the psycho-genetic chains forged by Locke in epistemology and to introduce a complete treatment of the terms by methodological correction. The book has a beginning (historical), a transitional middle (analysis and simple abstraction) and an end (synthesis or double abstraction: dialectic). "Unsere Methode ist diejenige der kritischen Linguistik. Diese misst Begriffe und Wörte an ihren Quellen, nämlich den Dingen und ihren Beziehungen." The philological approach, however, including introspective and aesthetic angles, is emphatically denied.

Schule der Abstraktion is obscure and garrulous. It has the true Munich *Bierfest* atmosphere; still, it is stimulating and contains some suggestive steps in epistemology. Rather than linguistic the book is epistemological in bias, if epistemology is considered as the product of psychology and logic after the Cartesian model. The author does not convincingly overcome the psycho-genetic and introspective position which he disavows in his introduction.

GEORGE G. LECKIE

UNIVERSITY OF VIRGINIA

Mécanismes et conscience. Par E. AUGIER. Paris, Félix Alcan, 1934. Pp. 356.

M. Augier holds that psychology can be thoroughly objective and at the same time make use of introspection, provided the tendency of the classical psychologists to mingle observer and observed is overcome. To this end he has rewritten the familiar materials of mental life in terms, not of remembered and generalized content or states, but of specific mechanisms functioning in a temporal order. This attempted rehabilitation of internal analysis and its reconciliation with behaviorism is, as its author realizes, a direct challenge to the whole Bergsonian position. In spite of M. Augier's extensive efforts, it is easier to feel that we have two languages for the "same facts" than it is to demonstrate their mutual equivalence or the philosophical monism which he discerns beneath their differences.

HAROLD A. LARRABEE

UNION COLLEGE

L'Individualité. Par MAURICE CAULLERY, PIERRE JANET, C. BOUGLÉ, J. PIAGET, LUCIEN FEBVRE. Paris, Félix Alcan, 1933. Pp. 157.

The difficulties encountered in extending so anthropomorphic a concept as that of individuality to the rest of creation are illustrated by this report of the lectures and discussions during the third "international week of synthesis" convened by M. Henri Berr. Both in biology and in psychology, individuality is found only *en devenir,* as a tendency toward unity rather than as a finished and definable product. The professors of sociology, child psychology, and history find the going a bit easier, perhaps because less precision is expected of them. There is a condensed summary of the week's conclusions by M. Georges Matisse.

HAROLD A. LARRABEE

UNION COLLEGE

Neo-scolastica idealismo e spiritualismo. Per FRANCESCO OLGIATI e ARMANDO CARLINI. Milano, Società Editrice "Vita e Pensiero", 1933. Pp. viii, 180.

This is a debate between a Neo-scolastic and a Catholic idealist, although Mr. Carlini quite correctly qualifies the epithet 'idealist' as attributed to his doctrines. His is the attempt to reach the interiority of thought, an interiority which Greek philosophy and even modern idealism have betrayed. The best of Thomas Aquinas, he thinks, is in the direction of this interiority of thought and of reality, and the Greek influence under which he labored merely covered up and distorted the real logic of his theological premises. This is somewhat akin to the theory of Gouhier and others that the tragedy of St. Thomas was that the accepted science of his time was Aristotle's.

Father Olgiati, on the other hand, quite rightly doubts whether a science of metaphysics, or any science, can be built on Mr. Carlini's daring attempt to reach the absolute spiritual interiority of reality. A debate of this sort would be very worth while on this side of the water, where Neo-scholasticism turns on itself in such sterile fashion without the opposition of anyone accepting the same theological premises.

R. CATESBY TALIAFERRO

UNIVERSITY OF VIRGINIA

La religiosità dell'arte e della filosofia. Per ARMANDO CARLINI. Firenze, G. C. Sansoni, 1934. Pp. x, 232.

This work gives more systematic form to some of the general ideas enunciated by Mr. Carlini in the debate with Father Olgiati. It is quite clear that his is a dialectic of problems and inadequacies, and that he is expressing a traditional Augustinian principle in idealistic terminology. The conflict within man of sameness and otherness, of interiority and exteriority, in pure reason, practical reason and in pure sensibility, demands a transcendental principle of absolute interiority, the 'pure psychological principle'. But that this principle is never experienced, although its existence must be posited, presents another problem of inadequacy of man to himself, and this, in turn, postulates the existence of the Transcendent, the 'theological principle'. It is through the necessary posing of these problems, of these flights to the infinite, that religiousness is introduced into philosophy and esthetics.

R. CATESBY TALIAFERRO

UNIVERSITY OF VIRGINIA

L'Odyssée de la conscience dans la dernière philosophie de Schelling. Par VLADIMIR JANKÉLÉVITCH. Paris, Félix Alcan, 1933. Pp. 358.

Although Schelling's philosophy appears to have changed from one of 'system' to one of 'process' or 'growth', the author of this study contends that it is consistently the latter; the change is one of accent only. Reacting against the Kantian and Fichtean idealism, and against monism and the emanation theory, Schelling is said to have made fully clear, in his later writings, a complete organicistic philosophy. By this he thought to reconcile countless philosophical antitheses, such as realism and idealism, the one and the many, freedom and necessity, spirit and matter, subject and object, action and theory. One must study the relationship of the generator to the engendered to get the secret of the solution of these problems. Jankélévitch gives a full account of Schelling's metaphysics. Bergson and Leibniz are, apparently, Schelling's closest philosophical companions.

PAUL REYNOLDS

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The following books have been received:

Logic in Theory and Practice. By CHARLES GRAY SHAW. New York, Prentice-Hall, Inc., 1935. Pp. xviii, 428.

A Modern Book of Esthetics. By MELVIN M. RADER. New York, Henry Holt and Company, 1935. Pp. xxxvi, 504.

God and the Common Life. By ROBERT LOWRY CALHOUN. New York, Charles Scribner's Sons, 1935. Pp. xxiv, 304.

The Attitude of Voltaire to Magic and the Sciences. By MARGARET S. LIBBY. New York, Columbia University Press, 1935. Pp. ii, 300.

Saint Thomas Aquinas: On the Governance of Rulers. Translated from the Latin by GERALD B. PHELAN. Toronto, St. Michael's College, 1935. Pp. ii, 144.

What Religion Is and Does. By HORACE T. HOUF. New York, Harper & Brothers, 1935. Pp. viii, 374.

Law and the Lawyers. By EDWARD S. ROBINSON. New York, The Macmillan Company, 1935. Pp. xiv, 348.

An Outline of Modern Occultism. By CYRIL SCOTT. New York, E. P. Dutton & Co., Inc., 1935. Pp. viii, 240.

The Ethics of the Cambridge Platonists. By EUGENE M. AUSTIN. Philadelphia, 1935. Pp. 86.

The Accuracy of the Bible. By A. S. YAHUDA. New York, E. P. Dutton & Co., Inc., 1935. Pp. xxxviii, 226.

A Documentary History of Primitivism and Related Ideas: Vol. I, Primitivism and Related Ideas in Antiquity. By ARTHUR O. LOVEJOY and GEORGE BOAS with supplementary essays by W. F. ALBRIGHT and P. E. DUMONT. Baltimore, The Johns Hopkins Press, 1935. Pp. xvi, 482.

My Philosophy. By J. B. PENNISTON. Shanghai, Thomas Chu & Sons, 1935. Pp. xii, 196.

On Interpreting Locke. By F. H. ANDERSON. Reprinted from the University of Toronto Quarterly, Vol. IV, No. 4, July, 1935. Pp. 524-5.

Value and Existence. By N. O. LOSSKY and JOHN S. MARSHALL. London, George Allen & Unwin, 1935. Pp. 224.

Collected Essays. 2 Vols. By F. H. BRADLEY. New York, Oxford University Press, 1935. Pp. xii, 708.

Studies in the Platonic Epistles. By GLENN R. MORROW. Urbana, The University Press of Illinois, 1935. Pp. 234.

The Problem of Knowledge in Scottish Philosophy. By TORGNY T. SEGERSTEDT. Lund, C. W. K. Gleerup, 1935. Pp. 158.

Praelectiones theologiae naturalis: cours de théodicée. Par PEDRO DESCOQS. Paris, Gabriel Beauchesne et ses fils, 1935. Pp. vi, 928.

Recherches philosophiques. Par A. KOYRÉ, H.-CH. PUECH, A. SPAIER. Paris, Boivin & Cie, 1934-1935. Pp. vi, 532.

Le bouddhisme. Par ENTAI TOMOMATSU. Paris, Félix Alcan, 1935. Pp. viii, 292.

Mensch und Begriff. Von WERNER SCHINGNITZ. Leipzig, S. Hirzel, 1935. Pp. xxxvi, 682.

Objektivität, voraussetzungslose Wissenschaft und wissenschaftliche Wahrheit. Von FRIEDRICH WEIDAUER. Leipzig, S. Hirzel, 1935. Pp. 40.

Die Renaissance. Von HEINRICH SCHALLER. München, Ernst Reinhardt, 1935. Pp. 192.

Zur Kritik des logischen Transzendentalismus. Von ARNOLD WILMSEN. Paderborn, Ferdinand Achöningh, 1935. Pp. xii, 250.

Untersuchungen zur symbolischen Logik. Acta Philosophica Fennica, Fasc. I. Von UUNO SAARNIO. Helsinki, Akateeminer Kirjakauppa, 1935. Pp. 154.

NOTES

Readers of the *Review* who are engaged in research in the field of philosophy are reminded that a small fund has been set aside by the American Council of Learned Societies to be used in supplying to members of the constituent societies rotograph-service for the duplication of rare manuscripts. Applications for such service should be addressed to the Chairman of the Publications Committee of the Philosophical Association, Professor E. A. Burtt, Cornell University.

The following is a list of articles in current philosophical periodicals:

MIND, XLIV, 175: *C. A. Campbell,* Moral and Non-Moral Values; *H. D. Roelofs,* The Predicament of Naturalistic Empiricism; *Alice Ambrose,* Finitism in Mathematics (II); *P. Henlé,* A Definition of Abstract Systems; *P. Leon,* Artistic Form and the Unconscious.

PHILOSOPHY, X, 39: The Present Need of a Philosophy (Letter to the Editor): *John Macmurray,* The Dualism of Mind and Matter; *Leslie F. Walker,* Great Thinkers (V) Aquinas; *W. D. Lamont,* Nationalism and the International Ideal; *Sir Josiah Stamp,* Can Present Human Motives Work a Planned Society?; *H. H. Price,* Logical Positivism and Theology; *Arthur T. Shillinglaw,* Pleasure and Conation; *S. V. Keeling,* Professor Broad's Examination of McTaggart's Philosophy.

THE MONIST, XLV, 2: *Jared S. Moore,* Alpha and Omega: The Drama of Reality; *Bruce W. Brotherston,* The Empirical Spirit; *Gustav E. Mueller,* Plato's Dialectical Idealism; *Edward L. Schaub,* Maimonides: His Background and His Rôle in History; *Henry Alonzo Myers,* Systematic Pluralism in Spinoza and Hegel; *Street Fulton,* Husserl's Significance for the Theory of Truth.

THE JOURNAL OF PHILOSOPHY, XXXII, 13: *Donald A. Piatt,* That Will-o'-the-Wisp, the Innocent Inscrutable Given; *M. Whitcomb Hess,* A Note on General Value Theory. 14: *Stephen C. Pepper,* The Root Metaphor Theory of Metaphysics; *John R. Reid,* The Apotheosis of Intelligence. 15: *Joseph Ratner,* Scientific Objects and Empirical Things; *R. A. Schermerhorn,* Idealism, Essence, and Existence. 16: *Philip Stanley,* The Scepticisms of David Hume; *P. S. Naidu,* Critical Realism and John Locke.

THE INTERNATIONAL JOURNAL OF ETHICS, XLV, 4: *Evander Bradley McGilvary,* Freedom and Necessity in Human Affairs; *Harold Chapman Brown,* The Ethical Evaluation of a Social Order; *K. R. Srinivasiengar,* Outline of an Emergent Theory of Value; *Edwin R. Embree,* Rebirth of Religion in Russia; *John Dollard,* Mental Hygiene and a "Scientific Culture".

THE HIBBERT JOURNAL, XXXIII, 4: *J. L. Stocks,* Leisure; *Vida D. Scudder,* Work; *Claude G. Montefiore,* What a Jew Thinks about Jesus; *R. A. Edwards,* The "Peasant" Theory of Jesus; *Earl M. Wilbur,* Faustus Socinus, Pioneer; *J. Wright Buckham,* Everyman a Philosopher; *W. M. Childs,* A Study of Changed Conditions: Rural Life in Lincolnshire Sixty Years Ago; *Peter B. G. Binnall,* The Well of Life in British Folklore; *Paul E. Johnson,* The Religious Philosophy of Josiah Royce; *Leslie J. Belton,* Individualism and Self-Transcendence; *G. F. McCleary,* Malthus After a

Hundred Years; *Edward Langton*, The Reality of Demonic Powers Further Considered; *James Moffatt*, Survey of Recent Theological Literature.

THE JOURNAL OF RELIGION, XV, 3: *Willard L. Sperry*, Religion in an Age of Science; *H. Richard Niebuhr*, Man the Sinner; *Stewart G. Cole*, The Relevancy of Jesus; *Julius Seelye Bixler*, The Mystic and His Absolutes; *John Wright Buckham*, Religious Experience and Personality; *George Dykhuisen*, Royce's Early Philosophy of Religion.

THE NEW SCHOLASTICISM, IX, 3: *Paul Hanly Furfey*, A Foreword to Sociology; *Philip S. Moore*, The Authorship of the Allegoriae Super Vetus et Novum Testamentum; *John K. Ryan*, Anthony Legrand (1629-1699): Franciscan and Cartesian.

ANGLICAN THEOLOGICAL REVIEW, XVIII, 3: *Norman B. Nash*, The Christian Experience of Grace; *Herbert H. Gowen*, The Religion of Heavenly Reason.

SPECULUM, X, 3: *S. B. Meech*, Three Fifteenth-Century English Musical Treatises; *A. H. Krappe*, Mediaeval Literature and the Comparative Method; *E. von Erhart-Siebold*, Aldhelm's Chrismal; *Pauline Aiken*, Vincent of Beauvais and Dame Pertelote's Medicine; *L. W. Jones*, Two Salzburg Manuscripts and the Influence of Tours; *B. J. Whiting*, Proverbs in the Writings of Jean Froissart; *Sidney Painter*, English Castles in the Middle Ages; *Charles Niver*, A Twelfth-Century Sacramentary; *H. Pflaum*, A Strange Crusaders' Song.

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY, XIII, 2: Obituary—William Ralph Boyce Gibson; *Gaius F. McIntosh*, The Relation of Psychology to Philosophy; *J. N. Findlay*, Emotional Presentation; *F. W. Fowler*, Value; *John Anderson*, Production, Distribution and Exchange.

ANALYSIS, II, 6: *B. von Juhos*, Empiricism and Physicalism; *Carl G. Hempel*, Some Remarks on 'Facts' and Propositions.

THE BRITISH JOURNAL OF PSYCHOLOGY, XXVI, 1: *J. Prasad*, The Psychology of Rumour: a Study Relating to the Great Indian Earthquake of 1934; *Robert H. Thouless*, The Tendency to Certainty in Religious Belief; *H. Banister*, A Study in Eye Dominance; *R. W. Pickford*, Some Mental Functions Illustrated by an Experiment on Reading. II; *W. M. Beveridge*, Racial Differences in Phenomenal Regression; *Godfrey H. Thomson*, On Complete Families of Correlation Coefficients, and their Tendency to Zero Tetrad-differences: including a Statement of the Sampling Theory of Abilities; *J. H. Wilson*, The Exactness of 'g' as Determined by Certain Intelligence Tests.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XLVII, 3: *T. Dembo* and *E. Hanfmann*, The Patient's Psychological Situation upon Admission to a Mental Hospital; *F. McKinney* and *J. A. McGeoch*, The Character and Extent of Transfer in Retroactive Inhibition: Disparate Serial Lists; *G. A. Fry* and *V. M. Robertson*, Alleged Effects of Figure-Ground upon Hue and Brilliance; *C. O. Weber* and *N. Bicknell*, The Size-Constancy Phenomenon in Stereoscopic Space; *W. Berry* and *H. Imus*, Quantitative Aspects of the Flight of Colors; *J. M. Hunt*, Psychological Loss in Paretics and Schizophrenics; *G. A. Fry*, Color Sensations Produced by Intermittent White Light and the Three-Component Theory of Color-Vision; *C. Pfaffmann*, An Experimental Comparison of the Method of Single Stimuli and the

Method of Constant Stimuli in Gustation; *R. H. Waters* and *Z. E. Peel*, Similarity in the Form of Original and Interpolated Learning and Retroactive Inhibition; *W. A. Bousfield* and *E. Spear*, Influence of Hunger on the Pecking Responses of Chickens; *B. Clark* and *N. Warren*, Depth Perception and Interpupillary Distance as Factors in Proficiency in Ball Games; *W. Dennis*, A Comparison of the Rat's First and Second Explorations of a Maze Unit.

PSYCHOLOGOICAL REVIEW, XLII, 4: *Wilbur M. Urban*, James Mark Baldwin; *Clarence W. Brown*, Subcortical Mechanisms in Learning: I. The Functional Significance of Subcortical Nuclei in Certain Simple Learning Tasks, with a Description of a Program for Further Experimental Work; *Raymond Holder Wheeler*, Organismic vs. Mechanistic Logic; *Henry N. Peters*, The Judgmental Theory of Pleasantness and Unpleasantness; *Thomas Ross*, Machines That Think—A Further Statement; *William A. Hunt*, Professor Gray's 'Objective Theory of Emotion'.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY, XVIII, 4: *D. Shaad*, Binocular Summation in Scotopic Vision; *H. N. Peters* and *J. A. McGeoch*, The Relationship between Time Spent in the Culs-de-sac of a Stylus Maze and Speed of Elimination; *F. L. Goodenough*, The Development of the Reactive Process from Early Childhood to Maturity; *R. S. Woodworth* and *S. B. Sells*, An Atmosphere Effect in Formal Syllogistic Reasoning; *J. T. Cowles*, An Experimental Study of the Pairing of Certain Auditory and Visual Stimuli; *L. Chidester*, A Preliminary Study of Bisection of Lines; *J. F. Bales* and *G. L. Follansbee*, The After-Effect of the Perception of Curved Lines.

PSYCHOLOGICAL BULLETIN, XXXII, 7: *Rudolf Pintner*, Intelligence Tests; *Vernon Jones* and *Robert H. Brown*, Educational Tests; *J. B. Maller*, Character and Personality Tests.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XLII, 3: *Ch. Renouvier* et *W. James*, Un Échange de Lettres, édité par R.-B. Perry; *Ed. LeRoy*, Ce que la Microphysique apporte ou suggère à la Philosophie (suite et fin); *J. R. Carré*, Pascal et Voltaire: Raison ou Sentiment; *C. Chevalley*, Variations du Style mathématique; *L. Brunschvicg*, L'Histoire de la Philosophie, par Émile Brehier; *J. Hyppolite*, Les Travaux de Jeunesse de Hegel d'après des ouvrages récents (premier article); *Th. Ruyssen*, Le Destin de l'Europe.

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